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THE
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VOLUME THIRD.



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APRIL, 1855.

[No. 9.]

ORIGINAL COMMUNICATIONS.

I. *Case of Leucocythemia, with Observations.* By JAMES WALLACE, A.M., M.D., one of the Medical Attendants to the Greenock Infirmary, &c.

On the 27th of March, 1852, Helen Danahy, a mill-worker, presented herself for advice and treatment at the Dispensary of the Greenock Infirmary, where I obtained from her the following particulars:—About two years previously, she received a kick on the left lumbar region, in which she had severe pain for six days; but she remained in a fair state of health for twelve months afterwards. She then, however, began to emaciate, and observed a swelling about midway between the floating ribs and Poupart's ligament on the left side. This has since been gradually increasing, and, within the last two months, been attended with occasional lancinating pain, aggravated on coughing or pressure. Seven months ago she had an attack of acute dysentery, which has returned within the last eight days. She has resided in Greenock for the last seven years, but is a native of Derry. She is now thirty years of age, and has been a widow for two years. She has had no children, but menstruated regularly till May last, since which, however, the catamenia have been entirely absent. She has never had any fever of the intermittent type, nor been in any ague district. At present she is very anæmic, the sclerotics having a peculiar pearly appearance, and the diathesis being evidently strumous.

She now complains of looseness of the bowels, attended with tormina and tenesmus (the dejecta containing slime and blood), and has pain, increased on pressure, in the epigastrium and right hypochondrium. A large swelling occupies the left side of the abdomen. Its anterior and inferior borders can be accurately felt, the former being a little to the left of, and parallel with, the linea alba, and the latter midway between the umbilicus and Poupart's

ligament. It is smooth on the surface and along the margins (except at the antero-inferior angle, where it is deeply notched), and can be moved upwards, as well as from side to side. The patient complains of a dull pain, increased on pressure, throughout the whole of the tumour, particularly in its antero-inferior angle, the pain besides being occasionally lancinating. There is some fulness in the right hypochondrium, the hepatic dulness being appreciable as far down as the umbilicus, but the margin of the liver cannot be made out. The rest of the abdomen is rather tympanitic; lungs clear; heart's sounds and impulse natural. *No enlargement of lymphatic glands.* Pulse 92, soft.

Having already had under my observation a case of leucocythemia, in connection with hypertrophy of the spleen, which Professor Bennett has reported in his work on the subject, I naturally suspected that this patient might afford an instance of that pathological condition. To ascertain this, I drew from a vein about half an ounce of blood, and found that, about five minutes after abstraction, a creamy-looking substance floated to the top, but was again easily diffused by slight agitation. After standing for twenty-four hours, the serum, which appeared to be normal, separated from the crassamentum, which was firm and thick, and composed of two portions, an upper and a lower, the latter being of the ordinary hue and the former of a cream colour, and about one-third of the thickness of the whole clot. Under the microscope, the white clot was seen to be made up of large, white, faintly-granular cells, immeshed in fibrine, and displaying, on the addition of acetic acid, one, two, or three nuclei with nucleoli. These were also scattered through the red portion of the clot, and bore to the coloured discs a proportion of about one to ten.

The nature of the case having thus been established, I was extremely anxious that Danahy should become an in-patient of the Infirmary. She was averse to this, however, and I had no alternative but to treat her in the out-department. Accordingly, after examining her urine, which presented nothing abnormal, I ordered her to be leeches on the epigastrium and right hypochondrium, and to take, every four hours, five grains of Dover's powder. This was followed, in five days, by chalk mixture with catechu and laudanum, under which, in a short time, the dysentery entirely abated. She was then put on the saccharine carbonate of iron, alternated with cod-liver oil three times a day, and desired to rub in iodine ointment over the tumour; but under this treatment she made no improvement, the report taken on the 30th of June being as follows:—"Cannot take the cod-liver oil. For the last three weeks, the legs have been oedematous and the face puffy, the urine being scanty, but otherwise normal. The tumour in the left side of the abdomen has somewhat increased, but is free from pain. There is still, however, some pain in the epigastrium. No fulness of the liver is perceptible, probably from the bulging on

the left side of the abdomen. Feeling of fluctuation indistinct. Emaciation advancing. *Glands of neck enlarging.* Appetite weak; bowels regular; pulse 92. To have five grains of the citrate of iron and quinine three times a day."

At this stage of the case, I again abstracted a small quantity of blood, and sent a specimen of it to Dr. Robertson of Edinburgh, who was kind enough, at the request of Professor Bennett, to analyze it for me, the results being as follows:—

Specific gravity of blood,	1.044		
Specific gravity of serum,.....	1.025		
Fibrine,.....	1.5		
Serous solids,	70.	} organic,..... 64.4 inorganic,..... 5.6	
Globules,.....	79.		
<hr/>			
Total solids,.....	150.5		
Water,.....	849.5		

1000.

At the same time I again made a careful examination of the ordinary as well as the microscopical appearances presented by the blood. Complete separation of the serum took place in eight hours. It seemed normal as to quantity, but was rather turbid. The crassamentum was not so distinctly divided as formerly into two portions, a considerable number of whitish streaks running through the coloured part (which was of a dirty purple), in addition to a thin creamy-looking stratum, which lay on the upper surface, and was about one-fourth of the thickness of the whole clot. The white cells did not appear to have increased in quantity, but there was in addition a few free nuclei. Those of the perfect cells were clearly defined by the addition of acetic acid, and were single, double, tripartite, or quadruple; some, besides, being curved and irregular, and all rendered of a yellowish colour by the reagent.

After this the oedema of the legs increased, and the abdomen became so distended with fluid as to cause considerable oppression in breathing, for the relief of which the patient was at last prevailed on to come into the hospital, where, on the 21st of July, she was placed under the care of my colleague, Dr. Fox. The treatment now consisted of hydragogue cathartics and diuretics, which were continued till the 6th of August, when pleuro-pneumonia supervened, the termination of the case being reported as follows in the journal of the ward:—

"*August 6th.*—Yesterday patient was in a pyrexial condition, and was suddenly seized to-day with a sharp pain in the right side of chest. The pain is augmented on taking a long breath, and by pressure. Decubitus on the left side. Percussion of right lateral region dull, a distinct friction sound being audible in that situation. *Cupping to six ounces. Calomel and opium every four hours.*

7th.—Pain in side relieved. Friction sound still distinct.

8th.—Pain gone, but dulness exists on left side of chest. Dyspnoea great. Clammy sweats. Pulse small and rapid. *Half an ounce of gin every hour.*

9th.—Became delirious last night, and died this morning."

The body was inspected two days after death, when, with the assistance of Mr. Gemmil, the house surgeon, I made a note of the following particulars:—The left pleural cavity contained thirteen ounces of turbid serum, the lower lobe of the left lung being in the stage of the grey hepatization, and invested with a thin layer of recently effused lymph, which also covered the diaphragmatic portion of the pleura. The right pleural cavity contained about two ounces of turbid serum, and the lower lobe of the right lung was in the stage of the red hepatization, a few patches of fresh lymph being attached here and there to the lower portion of its investing membrane. The pericardium contained $7\frac{1}{2}$ ounces of clear serum. The heart was normal, the left cavities being empty, and the right filled with very soft cream-coloured fibrine, which, in the venæ innominatæ, gradually merged into the red clot. The abdomen contained fifty ounces of clear serum. Old adhesions existed between the abdominal wall and the portion of the peritoneum covering the upper third of the spleen. This organ was very much enlarged, and occupied the left side of the abdomen, as indicated by the signs observed during life, a deep notch existing at the lower portion of its anterior border. It measured 13 inches in length, 8 in breadth, and 5 in thickness, and weighed six pounds, three ounces avoirdupois. The liver was also considerably enlarged and rather pale in colour, its weight being six pounds, seven ounces. The cortical portion of the right kidney was rather vascular. The intestines were pale, and the glands of the mesentery, as well as those of the neck, groin, &c., were considerably enlarged. The other organs were healthy.

Microscopical Examination.—The blood from the inferior vena cava and the venæ innominatæ was of a dirty purplish hue, and contained some soft cream-coloured clots, which exhibited the white cells (some of which were larger than others) entangled in great numbers, with a few free nuclei, in molecular fibrine, and having nuclei of various forms, similar to those observed in the blood abstracted on the 30th of June, but not becoming yellow on the addition of acetic acid. The proportion of white to coloured cells, in blood taken from different parts of the body, was about the same as that first noted, except in that from the splenic vein, in which there was a decided increase. In all the specimens of blood examined, there was seen a considerable number of small rhomboidal crystals of a yellowish colour, and soluble in acetic acid.*

* These were evidently a species of that class of crystals called *Hæmatoid*, to which attention has recently been directed by Virchow, and other observers.

The pulp of the spleen exhibited, in addition to a few fusiform cells and an abundance of coloured discs, an immense number of small, round, delicately-granular cells (the *splenic* cells), a considerable quantity of the *white* cells, and a few large *oval* cells,* filled evidently with nuclei of the latter. The trabeculae, in a section made by a Valentine's knife, were observed to be distinct, but no malpighian bodies were visible. The lymphatic glands were soft, and yielded on section a turbid juice, which presented, in great abundance, oil globules, granules, free nuclei, and small delicate granular cells, with nuclei very indistinct, but more apparent on the addition of acetic acid. A small portion of the liver, squeezed between glasses, showed the hepatic cells with an indistinct outline, and loaded with oil globules.

The class of cases to which this belongs, having been so recently investigated by Professor Bennett with his accustomed zeal and ability, it will not be necessary, in this communication, to do anything further than advert to a few points in the instance just related, as illustrative of the pathological nature of the affection.

I.—The disease, as its name is intended to imply, is characterized principally by the blood presenting, under the microscope, a great increase in the white corpuscles. In the healthy state no method has been discovered of determining the amount of these relatively to the coloured discs, but to the practised eye there can, notwithstanding, be no difficulty in ascertaining any moderate deviation from what must be the normal standard. The diagnosis, therefore, of the affection is exceedingly simple, and requires nothing more than the histological examination of a drop of blood taken from some part or other of the body. When squeezed between glasses, the *space* occupied by the white cells appears to the naked eye larger than that taken up by the coloured, but, under the microscope, it is found that the latter, from their aggregation into rouleaux, exceed the former very materially in point of *numbers*. The only way, therefore, in the present state of our knowledge, to come to anything like a satisfactory approximation to the proportion existing between them, is that proposed by Professor Bennett, of counting in the rouleaux the number of the yellow cells, and in the interspaces the number of the white. By adopting this method, it was observed, in the case of Danahy, that the colourless corpuscles were a little more than one-third as numerous as the coloured, the clot of the blood first examined having a layer of white cells about a third of its thickness, and having these in the red portion in the ratio of one to ten of the others. From this, a very simple calculation will show that they existed in the

Vide *British and Foreign Med. Chir. Review* for January, 1853, p. 277, and for April, 1854, p. 541; also an elaborate article in the number for October, 1853, by E. H. Sieveking.

* For the significance of these, vide Bennett on Leucocythemia, section 7.

whole blood in the proportion of thirteen to thirty, a relation which was found to be maintained throughout the further progress of the case. The report taken on the 30th of June, however, may appear to some not to warrant this conclusion, as it is stated that the white portion of the clot was then only one-fourth of the red; but this will be seen not to be the case, when it is remembered that the latter was permeated by a considerable number of whitish streaks, which necessarily increased the number of the colourless cells, as compared with the amount existing in the corresponding portion of the clot examined on the 27th of March. In this respect, therefore, the present case agrees with what has been observed in all the recorded ones followed to a termination, that, so far as the cell elements of the blood are concerned, it would seem that the white corpuscles, after reaching a certain amount, do not accumulate to any further extent. There must, of course, in the history of every case, be a period when the white corpuscles are being gradually augmented in number; but as only one instance of advancing leucocythemia has been noticed, and that without a knowledge of the ultimate result, the condition on which the cessation or modification of the process depends, must be looked for in the observations of Moleschott, to which allusion will be afterwards made.

II.—A chemical analysis of the blood of persons affected with leucocythemia has been made in nine instances, and in these it was found that its specific gravity was remarkably low, in consequence of the corpuscular element being deficient to a great degree, the fibrine, however, being in excess, and the solids of the serum but slightly diminished; while in two cases in which it was sought for, the proportion of iron, as the small amount of red corpuscles would naturally indicate, was ascertained to be much reduced. For general purposes, the composition of healthy blood may be stated as follows :*

Fibrine,	2
Corpuscles,	130
Solids of serum,	80
<hr/>	
Total solids,	212
Water,	788
<hr/>	
	1000

On comparing this with the analysis, by Dr. Robertson, of the blood sent him on the 30th of June, it will be seen that the results are in accordance with former observations, except in regard to the amount of fibrine. This, in the present instance, was as low as 1·5, while two of the cases already recorded had it as high as 6 and 7 respectively, the least hitherto noticed having been 2·3, and that in a case complicated with purpura hæmorrhagica, a disease

* Carpenter, *Gen. and Compar. Physiol.*, p. 799.

notorious for its deficiency in such an important constituent of the blood. But if, as Mr. Paget states, the colourless corpuscles "cannot, by any mode of analysis yet invented, be separated from the fibrine of mammalian blood,"* the probability is, that this substance was even less than 1.5, which should, moreover, be reduced still further, for Dr. Robertson, in a note accompanying his analysis, remarks, that "there may be some slight error in the determination of the fibrine, which was unusually soft. The bits of zinc were too heavy, and may, I fear, have broken up the fibrine a little after its separation. However, the error cannot, I imagine, exceed .5, and the quantity has been rather *over* than *under* estimated."†

III.—The organs most commonly affected in leucocythemia are the spleen, liver and lymphatic glands, alterations in the whole of which were exhibited in the case forming the subject of this paper. In regard to the spleen, it might naturally be supposed, from the frequency of its enlargement, that the disease was associated in some way or other with intermittent fever. In the present instance, particular inquiries were made on this point, but, as in the cases already recorded, nothing was ascertained that could give the slightest countenance to the conjecture. Nor is it every case of splenic hypertrophy that shows the remarkable change noticed in the blood, for, since attention was first directed to the phenomenon, instances have been met with, in which repeated examinations could not detect any increase in the colourless corpuscles. Indeed, while Danahy herself was under treatment, a child, two years of age, came under the writer's care at the Dispensary, in consequence of an enlarged spleen, which occupied the whole of the left side of the abdomen, but, though looked for from time to time, the abnormal proportion between the two kinds of cells could never be made out. The change in the organ, in fact, in the two classes of cases, is essentially different, being attributable, in those last mentioned, to congestion, increase in the fibrous tissue, or simple enlargement, existing alone, or in various degrees of combination with one another; and in the others to a superabundance of the corpuscular element, as will be seen, on referring to the *post-mortem* examination, to have been well exemplified in the instance under review. To a similar cause, also, is to be ascribed the change in the lymphatic glands, which were found in a state of hypertrophy in all parts of the body, the cells and nuclei peculiar to them being increased to a great degree. It will have been noticed, however, that they were free from enlargement when the patient first came under observation, and that no alteration was visible till three months afterwards, presenting, in that respect, a

* Kirke and Paget's Physiol., p. 57.

† Before transmitting the blood, I had defibrinized a portion of it, by agitating it in a closely-stoppered phial, into which a few pieces of zinc had been previously introduced.

remarkable contrast to the change exhibited by the blood, which, as has been already shown, maintained, during the whole time the case was under treatment, the proportion between the white and coloured cells, without any appreciable variation whatever. And this will appear still more striking, when the part which these organs play in the formation of the blood is taken into account, for it would seem, from the minute structure of the lymphatic glands, including, according to Professor Bennett (who supports the opinion advanced long ago by Hewson), the spleen, thymus, thyroid, pituitary, pineal, and suprarenal bodies, as well as from repeated observations in cases of leucocythemia, that the white cells are nothing more than a farther phase of the corpuscles which are proper to this system of organs, and which probably enter the circulation by the veins.* It would naturally be expected, therefore, at first sight, that the blood, in the present case, would have exhibited a progressive increase in the proportion of the colourless to the coloured cells, in correspondence with the gradual enlargement of the lymphatic glands. But this apparent incongruity will be removed, when the changes which the former still further undergo is taken into consideration.

Before attention was called to this class of cases, it was generally admitted by physiologists, that the yellow corpuscles were formed in some way or other from the white, Mr. Paget maintaining that they were the result of a direct transformation from the latter; while, according to Mr. Wharton Jones, whatever may be the case in the oviparous vertebrata, in mammalia they are the liberated nuclei merely of the colourless, an opinion which has received additional weight from what has since been observed in leucocythemia. In this disease, particularly on the application of reagents, as was well noticed in the blood examined in the present instance, the nuclei can be seen dividing fissiparously into two or more, which, on being set free, acquire colour in a way which has not yet been *thoroughly* ascertained. Since the publication, however, of Professor Bennett's monograph, *some* light has been thrown on this subject by the investigations of Moleschott. This observer found, on the removal of the liver from frogs, that the proportion of the colourless to the coloured cells, in blood taken from the heart, was as 1 to 2·24, that of the healthy state being as 1 to 8; but that, after excision of the spleen, it was as low as 1 to 9·06, while, after extirpation of both liver and spleen, it was as high as 1 to 2·02; and from these results he infers that the liver is an organ in which the conversion of the colourless into the coloured cells is being carried on to a great extent.† It would

* It is now well established, that the splenic and portal veins contain a large proportion of the white cells in health as well as disease.—Vide Kölliker, *Microscop. Anat.*, vol. ii., part 2, p. 279, and Henle's *Zeitschrift*, 1851, p. 172.

† Quoted from Müller's *Archiv.* for 1853, in the *Brit. and For. Med. Chir. Rev.*, for July and Oct., 1853, pp. 252 and 536.

appear, then, that no matter what may be the amount of hypertrophy exhibited by the lymphatic glandular system, the proportion between the two kinds of cells will depend very much on the condition of the liver (which was found in the present case in a state of enlargement, with fatty degeneration), and, moreover, that leucocythemia consists as much of an arrest in the development, as of an increase in the production, of the colourless corpuscles.

IV.—In regard to the treatment pursued in the case which has given rise to these remarks, little can be said. For the whole class, the general indication, from the great amount of glandular enlargement, as well as from the small proportion of iron existing in the blood, is evidently the exhibition of that mineral, with or without iodine, in addition to cod-liver oil. As the disease, however, as was well noticed in the case of Danahy, (who had two successive attacks of dysentery, and was ultimately cut off by pleuro-pneumonia,) is, unfortunately, often complicated with accidental affections, which assume, in many instances, an aspect more serious than the fundamental one, and as the results have been almost invariably fatal, it becomes exceedingly difficult to adhere to any plan that may be laid down. That the affection, notwithstanding, is not altogether incurable, would appear from a case reported in the *American Journal of Medical Science*, by Dr. Hewson,* who found that the blood became healthy, and the spleen of its normal size, after a course of iron and quinine, continued for a space of five weeks. He states at the same time, however, that when examined three months afterwards, there was an increase in the proportion of the colourless cells, although the patient was apparently in good health. An instance, therefore, of perfect recovery has yet to be recorded.

II. *Case of Suicide, accompanied by some singular circumstances.* By JAMES B. BALFOUR, M.D., Kilsyth.

(Read to the Glasgow Medico-Chirurgical Society.)

I HAVE been induced to bring the following case under the notice of this society, principally in consequence of the novel, and, I may almost say, unprecedented mode in which the suicide was committed. The case presents in itself many points of interest, both in a medical and legal point of view, and had death ensued at once, or had the individual not lived to give a clear and circumstantial account of what he himself did, and also explain his motives for the act, it might have led to one of the most intricate trials on record, and one where, from the circumstantial evidence and the motives which existed to induce the perpetration of

* Quoted in *Brit. and For. Med. Chir. Rev.* for Jan., 1853, p. 288.

murder, and also, I may say, from the opinions which I feel convinced would have been expressed by every medical man, the life of an innocent person would have been sacrificed to satisfy the demands of justice.

The subject of my remarks was a gentleman in easy circumstances, who lived on a small property in ———shire; he had a housekeeper, with whom he lived on terms of intimacy, she having borne three or four children to him, all of whom, however, I believe, are dead. He was a well-educated man, and had rather a scientific turn of mind; but for some years previous to his death, he had become much addicted to intemperance, and I had attended him on several occasions for attacks of delirium tremens. These attacks were usually of short continuance, and yielded easily to the usual treatment and abstinence from intoxicating liquors. Generally after them he betook himself to more than usual exertion in looking after his farm and other manual employment. At all times, I may state, he was accustomed to take a great deal of exercise, which may account for his having these attacks less frequently than one would have anticipated from the drinking bouts he used to indulge in.

For some time before the last sad escapade took place, he and his housekeeper had been on anything but agreeable terms. She also was given to intemperance. He was anxious to get rid of her, but found some difficulty in accomplishing this, and quarrels between them were of frequent, almost daily, occurrence; and to add to his annoyance, his affairs were not in a most satisfactory condition. He was engaged in lawsuits, and having once got into the vortex of the Court of Session, action followed action, and process followed process, till his mind appeared wholly engrossed with them; and, like the celebrated Peter Peebles, he discoursed eloquently on the various actions in which he was involved, pointing out, in a most lucid manner, the law's delays, the low tricks of his opponent's agent, and the certainty of his ultimately gaining his case; while all the time he quaffed his foaming pot of porter, or drained his tumbler of well-mixed whisky punch. Latterly, I would almost have said that law, drink, and domestic feuds had made him mad.

On Thursday, the 22d of June, he went to the cattle show at ———, at which time he was quite sober and correct; he remained to the cattle show dinner, and having indulged pretty freely, came home intoxicated. He kept up this state of excitement all night, and returned next day to the same place, where he remained drinking, and, I believe, was never sober until Thursday following. On the Wednesday night he was in company with a sheriff's officer, who, I suppose, in order to quiet him, because he was both talkative and quarrelsome, told him he had a warrant in his pocket for his apprehension, and that he had better take care what he was about. This appears to have made a deep im-

pression on his mind, for he returned home next morning under the conviction that he was about to be arrested and tried for having committed murder. This was on Thursday the 29th. He went out and in to his house considerably excited, and always listened to hear by the electric telegraph wires, which run along the railway close by his house, the account of his trial, which, he said, was going on in Edinburgh. He went several times to a public-house, which is close by, and having given the woman of the house all the money he had to keep for him, he spoke to her of his having committed murder, and of his arrest and trial. He had some drink here, although he never intoxicated himself that day, but his manner was excited; however, one would not have remarked much wrong with him, had it not been for his constantly talking of this murder. He kept his bed almost all the Friday, and was very dull; he drank nothing except a little warm toddy in the afternoon, and the only time he rose from bed was in order to listen to the electric wires, which, he said, he distinctly heard.

On Saturday morning, July 1, he called his housekeeper, and gave her a paper which he had in his desk, and which bore the date 1851, which was to the following effect:—

"I, ———, do hereby authorize my heirs to pay ———, my late servant, £6 sterling every six months, and the first payment to begin 14 days after my death; and the said sum of £6 to be paid her every six months, and to continue till her death. All which is for her long and faithful services in the family."

Towards the afternoon he told her that his trial was over, that he was to be hanged, and that the men were to be out from Edinburgh that day to take him off, but he added, "I will do for them in that respect, for they will never have the pleasure of hanging me." The housekeeper began to be a little alarmed about his condition, and in the course of the day sent a message for me to visit him. About 4 p.m. he went into his room, off the kitchen, closed the door, and then, deliberately kneeling down beside a large iron safe which stood in the room, he dashed his forehead against the corner of the safe until he had fairly denuded it of skin, to the extent of fully two inches in length by one in breadth. The skin was literally smashed, and hanging in shreds over the forehead. Having laid the skull quite bare, he found he had not the power to drive the corner of the chest into the brain; he therefore took a nail, and having placed the point against his skull, he steadied the nail with his fingers, and coolly struck the head against the corner of a stone mantel-piece, until, as he said, he got the nail to stick in the skull. He then took a large stone, and by repeated blows drove the nail home; he found, however, that the hole was not large enough. He therefore drove other four or five nails around the first one, in

order to widen the aperture. Having accomplished this, he took the longest nail he could procure, and, according to his own graphic description, having pushed it in as far as it would go, he gave it a rumble in his brain. This done, he took a fork and stabbed himself in the abdomen in three or four places, and then, opening the door, he coolly presented himself before his house-keeper, a ghastly spectacle, and said, "I have done the thing now." She began to scream, and tried to seize hold of him, but he rushed past her, and, having gained the outside of the house, began to dash his head forcibly first against a gate-post, and then against the wall. The screams of his housekeeper brought some parties working in an adjoining field, when he was secured and taken into the house. I arrived a few minutes afterwards, and found him standing in the house, calm and composed, and covered with blood. Having examined the wound, and removed some pieces of loose bone, I at once proposed to apply the trephine, but this, which was the only treatment admissible under the circumstances, he himself calmly but resolutely refused to submit to, and those around him also did so. I had therefore to content myself with removing, as far as possible, everything that could press upon the brain, and then dressing the wound and enjoining quiet.

I will now submit the report of the case, as I find it in the notes taken at the time, with the account of the *post mortem* appearances presented.

July 1, 1854, 5 p.m.—Visited ———, ———. Found him covered with blood, which proceeded from a gash in forehead. Wound in forehead directly in centre of brow, proceeding from upper part of nose upwards of two inches. The skin was much destroyed, as if by repeated blows and cuts; the wound was an inch wide, and a piece of the skin, much lacerated, hung over nose. The bone was quite bare, having been denuded of its periosteum, and in centre of wound there appeared a hole in the skull, from which blood jetted freely from the mouth of some small vessel. On examining hole with probe, found the edges lacerated, and that it penetrated right through the skull into the substance of the brain, the membranes and substance of which organ were torn. I could find no bone in the brain, although there may have been some small pieces buried in its substance. The wound must evidently have been caused by violence, and arisen from some sharp-pointed instrument driven forcibly against the skull. The hole was of such a size as to admit easily the point of my little finger. When I visited him I found him calm, but his appearance was that of excitement, and his manner was hurried. Pulse small, about 120. He had all the appearance of a person who had been drinking, but his answers to questions, although quick and short, were coherent.

There were a good many other cuts on the head, especially

one over right temple, and another over junction of parietal bones. All these cuts appeared to have been inflicted by some sharp instrument. There were also several wounds on the abdomen, on right side of umbilicus, as if the result of the forcible application of some sharp-pointed instrument. He stated distinctly that all the wounds were inflicted by himself with a nail, and dashing his head on wall, and with a fork, &c.

2nd.—Found him in forenoon composed; pulse still quick; no pain in head, only a dizziness when he rose. Wound looking well, but still bleeding slightly. There is about him all the appearances usually found in a person who has been drinking long, and on whom *delirium tremens* is threatening. In the evening he was the same as in forenoon.

3rd.—Still keeping in a favourable condition, and all the symptoms already described continuing much as they were; complaining of no pain in head; tongue much coated.

4th.—Wounds looking remarkably well, and everything appears to be in a favourable way, except that his manner is a little more excited than it has yet been; pulse rather above 100, but of ordinary strength; tongue coated; some sickness and vomiting.

5th.—To-day there is every symptom of impending delirium. His manner is excited; face flushed; a good deal of low muttering to himself, and some incoherence in his talk; great irritability and captiousness at anything done either for him or around him. Wounds looking well, and still complains of no pain. He is picking the bedclothes, and talking much. Pulse above 120, small; tongue much coated; danger of unfavourable results evidently increasing; bowels moved freely.

6th.—This morning I found him in a comatose condition; his pulse 120, small and sharp; and not capable of being roused. I therefore called in Professor Andrew Buchanan of Glasgow, who came at 3 p.m., and who, after examination, perfectly concurred in my opinion of the case, and agreed with me that trephining in order to remove any loose bones which might be pressing on the brain, was the only practice which would give any chance of life. We therefore trephined the skull, and removed four or five pieces of bone, which were detached pieces of the inner plate of the frontal bone, pressing upon the membranes of the brain. He stood the operation well, and on the whole appeared to be rather improved than otherwise after the operation was finished. His bowels to-day have been freely moved. The membranes of the brain appeared to be uninjured, as no cerebral matter was observable.

7th.—Began to sink at 12 p.m., and died at 12 noon.

8th. *Inspection of the body, under Sheriff's warrant:—*

"Under the authority of a warrant from the Sheriff-substitute of _____ shire, we have this day inspected the body of _____, aged thirty-eight years, within his own house at _____, parish of _____, county of _____.

"The body was fresh, healthy-looking, and of the middle height.

"Over the centre of the brow there were two incised wounds, cross-shaped, the result of a recent surgical operation. There were also two lacerated suppurating wounds of the same parts, apparently about one and a half inch in length, and penetrating to the bone. They were situated vertically, and lay parallel to each other at a distance of about three-fourths of an inch, and reached nearly to the root of the nose. The bone of the skull, over a space about the size of a dollar, under these wounds, was bare, being denuded of its investing membrane, and had been perforated by a circular opening an inch in diameter, by the surgical instrument, the trephine. At the inferior edge of this aperture, and opening into it, and about an inch and a half from the root of the nose, there was an irregular oval-shaped perforation of the bone, lying transversely, and measuring in its diameter half an inch in length. A small quantity of frothy, bloody-coloured fluid escaped from these openings. Immediately under the smaller perforation of the bone, there was an opening of a similar size and shape in the investing membrane of the brain, the dura mater. The membrane surrounding this opening, to the extent of about two inches, was of a dirty reddish-brown colour. A probe was passed through the opening, in a direction obliquely downwards and inwards, into the cavity of the skull, to the extent of two inches.

"The surface of the right hemisphere of the brain, particularly at its upper and anterior aspect, was covered by a film of coagulated lymph, and marked in several places by extensive spots of bloody-coloured effusion. Its anterior lobe, at the apex, was coated with purulent matter, and the substance of the brain at this point was of a dirty pink colour, pulpy, and disorganized. On the internal and lateral surface of the anterior lobe, adjoining the large vein—the longitudinal sinus—there was the mark of a lacerated wound of the substance of the brain.

"The surface of the left hemisphere of the brain and of the cerebellum, or lesser brain, was congested. In other respects the organ was tolerably healthy. A small quantity of effused blood was found at the base of the skull.

"We are of opinion—

"1st, That the death of the above-designed ———— had occurred recently, after a short illness, and was the result of extreme external violence inflicted upon the skull and brain by means of some sharp metallic instrument, within a period of ten days.

"2nd, That the appearances presented by the lacerated wounds of the brow, the smaller perforation of the bone of the skull, the wounds of the dura mater and brain, and by the left hemisphere of the brain, were such as might have been caused by the forcible thrusting of an iron nail into the skull and brain; and,

"3rd, That it is possible, and, from the history of the case as given to us, probable, that these injuries may have been inflicted by the said ———— himself.

"This report we certify to be true on soul and conscience.

(Signed)

"R. B., Surgeon.

(Signed)

"J. B. B., M.D., and Surgeon."

Having thus brought under your notice the full history of the case, I would draw your attention, first, to the extraordinary nature of the act itself. One can hardly imagine an act of suicide committed under circumstances of such brutality—I had almost said bestiality; for it reminds one more of a butcher driving a pick into the head of an ox in the shambles, than that of one trying to curtail the period of his own existence. One could fancy a person, fully determined to commit suicide, shut up within while labouring under this temporary insanity, that he committed

four bare walls, and everything removed from him by which he could accomplish his design—we could fancy, I say, such a one dashing his head against the wall, until he had extinguished life; but to think that a man, with a knife lying upon his table, and half a dozen of razors lying in an open drawer, besides plenty of other appliances by which suicide might have been accomplished, should take such a barbarous, brutal manner of taking away his life, is almost beyond belief. And I believe it is a case of suicide without parallel in its mode of accomplishment; and had he not lived to give such a clear, circumstantial account, not only of all that he did, but also of his motives for doing it, nothing would have persuaded me but it was a case of murder. I feel assured that there is not a single medical man who would have pronounced any other opinion than that which I at first formed; namely, that it was impossible for any man to inflict such injuries upon himself.

This, then, brings us to the second point to which I would draw your attention, which is the position in which this poor woman would have been placed, supposing the man had died at once, or had never given any statement of how the injuries were received. Here was an innocent person, who assuredly would have been tried for murder, and certainly a more clear case of circumstantial evidence could scarcely be imagined. Here is a woman, who had been living with this man in a state of concubinage. Latterly, they had been constantly quarrelling; and to such an extent had those quarrels gone, that he was anxious and determined to dismiss her from the house. They live alone, and in a cottage removed a considerable distance from all dwellings. She is under the influence of drink (which she was on the day of the accident); this man is found dead, with no one in the house but her; his death has been accomplished by violence, and in her possession is found a paper, by which she receives £12 a year after his death. Here then is a motive to induce the perpetration of murder. But then comes the most damning evidence of all. Medical men are sent for to inspect the body, and report; and I have no hesitation in saying, that all of us would have given it as our opinion, that the wounds had been the result of violence inflicted by another, and not by the individual himself. All this shows how cautious every medical man ought to be in the opinion which he may form as to the cause of an accident, or the possibility of a person committing suicide.

There are other two points in this case, to which I will briefly allude. The first is, the beautiful illustration this case gives of the distinction between dipsomania and delirium tremens. I think every one will admit, from the whole history of the case, and also from the person's former habits, that, for some time previous to the fatal act, he was labouring under mental aberration, the result of long indulgence in intemperance; and it was

the rash act which terminated in death. The shock produced upon the system, and the great loss of blood which ensued, acted as a salutary agent, and appear at once to have removed all the maniacal excitement which previously existed; because we find him, immediately after the act, not only calm and composed, but minutely describing the means he employed to accomplish his end, the motives which induced him to do so, and expressing his regret for what he had done, and a lively hope that the injury might not turn out fatal; and it is not till the third day after the accident, that we find delirium tremens supervene. I do not doubt but that, while the loss of blood, which was very great, relieved the tension on the brain, and thus removed the maniacal excitement, and, as it were, cured the patient for a time, it was this very loss of blood which induced the subsequent delirium tremens.

The other point to which I would allude is the death by coma. I scarcely think that it was caused by any pressure on the brain from the wound, as there did not appear to be any bones exerting an undue pressure upon this organ. I am rather inclined to think that the coma was the result of the extensive deposit of lymph, which was found over the whole surface of the brain, and which was the result of long-continued dissipation. I may state, in regard to this case, that the patient stated he had concealed the nails at the door, where they were found, and, when found, they were covered with blood, and in the exact place where the patient described.

III. *Clinical Lectures on Typhus and Continued Fever.*¹ By CHARLES RITCHIE, M.D., one of the Physicians of the Royal Infirmary, Glasgow.

LECTURE IV.

(Continued from Vol. II., page 847.)

It has happened to me, when having occasion, during some sickly winter, to describe the cases to a student or medical man accompanying me through the Fever Hospital, that I have been able at one visit to direct his attention, it might be, to some Celtic maiden, following us with alarmed inquiring eyes, recovering from febricula, for which she had been mistakingly removed from her Saxon master's house; then, in an adjacent bed, to the suffering aspect, gathered up on her side, shading her flushed countenance, shining eye, and contracted brow and pupil from the light, of a patient in the first stage of typhus; and, beside her, to another prostrated on her back, her eyelids fallen on the red eyeballs, the face heavy, massive, and leaden-coloured, the limbs extended and uncovered—

a subject of typhus in the period of collapse. Passing along, we might look in succession to some hard-worked Hibernian, with pinched nostrils, and a crimson-coloured flush on his wan cheek, suffering from pneumonia; to another, a tavern-keeper, perhaps, sweating under the terrors of delirium tremens; to a third, with gastro-hepatic fever in the stage of excitement; and to another, emerged from this, and now in the period of intermission, and possibly of a bright golden colour from jaundice. In one side-room we might encounter several cases of variola, in another one of erysipelas, and somewhere else there might be examples of scarlatina, or of measles, or even of cholera. There might lie, like an inert mass, a silent person, replying tardily to questions, and that only in monosyllables, having a slow pulse and frequent sighings—a hopeless sufferer from cerebritis; here, confined in a jacket and secured to his bed in every limb, the maniacal-like subject of meningitis; and interspersed amongst such, perhaps along with instances of other diseases, I might in succession point to cases of enteric fever at different periods of its lingering course, or to examples of the several other forms of continued fever in their successive stages. If, after exhibiting to my companion this diversified scene, I should assure him that all he had witnessed, so multiform in appearance, was nevertheless identical in pathological nature, the same disease in variously modified conditions; and, favouring him with some admonitory remarks on the folly of those who would map out fever into localities, as a phrenologist does a head, I should next assert the existence of an indefinite multitude of fever vortices, revolving in cycles of unknown length, and appearing in our horizon in a constant succession of new species—one in essence, though most protean in aspect, which should be treated according as they exhibit a very inflammatory, a less inflammatory, or a positively putrid aspect of the system,—in what would my position and difficulties differ from those of writers who, misled by a respect for authority, and by various general analogies, labour to adjust to the principles of a common nature the discrepancies of character and opposite requirements of treatment of typhus and continued fever? It is no marvel that writers of this sort, however accomplished or familiar with fever, should, like a recent lecturer on the subject, confess that the disease is most hard to be understood, and the economy of it so difficult to be taught, that nothing short of his long acquaintance with its habits in hospital practice could warrant his making the attempt. It would, indeed, be as real matter of surprise, were the study of fever easy, and the elucidation of it simple, when so conducted, as that some intricate question of ancient ontology had been satisfactorily adjusted by the arrangement of the bones of separate genera of antediluvian animals into one skeleton.

But it is a remarkable circumstance, that while writers of a metaphysical cast of thought, even when most conversant with

the disease as practitioners, lose themselves in such embarrassments when treating of fever as a matter of philosophy, the ordinary medical practitioner, dealing with its practical curative management in every-day life, is often quite at his ease. It is a wide-spread notion amongst these, especially the less experienced of them, that the treatment of fever is a simple affair; and many such practitioners suppose, in particular, that could they but see their patients early, they might arrest the farther progress of the disease as certainly as they could extinguish a candle. Were every febrile seizure a mere ephemera, this might be true; but so many opposite conditions have their spring in the symptoms of a diary fever, that it is, in point of fact, a matter of some delicacy to intermeddle, at an early period, with a pyrexial disease, especially by the exhibition of what are called febrifuge remedies. These are means, usually of a herculean kind, which are employed with the professed object of strangling the fever, as it is called, or of forcibly breaking the chain of disordered conditions which constitute the disease.

There is a previous question involved in the employment of such agents, which is of great importance, but of difficult solution. Can any fever be cut short? I do not say any febrile condition, for on that point there is no room for doubt. We can cut short an inflammation; but is it possible to arrest the course of a special fever?

There is no fever, including even the plague, which does not at times present itself milder in its symptoms, less complete in the number of these, and several days shorter in its course, than the regular type of the disease. These anomalies are occasioned sometimes by the smaller amount of contagion, infection, or other exciting cause which has been received; at others, by idiosyncrasies in the patients, which may even create a total inaptitude to become affected; but the question returns, do they afford us solid ground to believe that we can, by artificial means, not only produce an amelioration, but also an absolute annihilation of the symptoms of fever? In the Fever Hospital here, the wards are sometimes, during epidemics of typhus, made to accommodate twenty-six instead of nineteen patients. The consequences of this procedure are soon observed in the increased gravity of the symptoms and augmentation of the mortality, from perhaps 1 in 9, to, as I have seen, 1 in 6.5. But, let the same patients be placed in wards, or, what is greatly to be preferred, in separate apartments, affording say 800 or 1000 cubic feet of air to each patient, or let them be retained in their own homes with equal advantages of treatment, and the general complexion of the cases will not become so grave, or the casualties so numerous.

During the epidemic to which I have alluded, small-pox also prevailed, and the hospital patients here being exposed to the same over-crowding, the deaths amounted to nearly 20 per cent. ; while,

in a subsequent year, every element being the same, except that I could secure for my patients a larger space, the mortality from small-pox fell to 5 in 64, or to 1 in 12·8, being only about 8 per cent.

And, in regard to enteric fever, the same law was in equal operation, the mortality during twelve months that the number of patients was maintained at the high rate, being, under my care, as 1 in 8·5, and in the other period of fourteen months, when the number of patients in a ward never exceeded nineteen, it was 1 only in 14·6.

Again, in respect to the other forms of continued fever, should you happen to practise in a country district, you will meet with inflammatory fever of different kinds, which commence with great violence, and often prove fatal, perhaps as soon as the tenth day, under a strong concentration of symptoms; but if such patients be bled early, according to their strength and the inflammatory complexion of the complaint, these cases often run on in a regular, typical, and moderate manner to the ordinary period of crisis. In some instances of this kind, the copious detraction of blood, on the second and third days, is succeeded by a complete remission, when, after twenty-four hours, the fever returns; but in the same fevers, in warm climates particularly, profuse bleeding is often followed by an instant dissolution of the severity of the disease, and by a speedy convalescence. In an analysis, made by Dr. Arthur Thomson, of 316 successful cases of fever, he found that, of 181 which came under treatment before the eighth day, the average duration was twenty-seven days; whereas, in the remainder, which received no treatment till after the seventh day of the fever, the average duration of each case was thirty-seven days, or ten days longer. And in another series of 2,074 fever cases admitted into hospital before the seventh day of the disease, the same observer found a mortality of 1 in every 16½ cases; while, in 1,461 cases of the same fever, which came under treatment after the seventh day, the deaths rose to 1 in 8½.

I cite these as examples of varied kinds of febrile disease, which can plainly be modified by treatment either for good or evil; but we are still without proof that any of them can by such means be changed in their nature.

Some thirty-five years since, it was everywhere in this country asserted, that a fever might be made whatever one saw fit by treatment. "Shut up a mild fever," said they, "in a close, dark, and hot room; allow abundance of bedclothes, and a liberal use of cordials, and you will speedily transform your case into a genuine example of typhus. Expose the severest form of this latter fever freely, on the contrary, to a pure atmosphere, to tepid sponging, or cold affusions; give cooling drinks, purgative and saline medicine, and use local or general blood-letting, and you will gradually induce a metamorphosis into simple fever:" and

such, to this day, is substantially the principles taught in the different metropolitan schools of clinical medicine.

But the force of such representations amounts to nothing in the present question, in consequence of the principle assumed in them, that typhus is simply a variety of continued fever. The case, so far as change of form in the fever is concerned, is simply prejudged.

Continued fever is never widely epidemic without several forms of it as ephemeral, and short fevers presenting themselves promiscuously, often, in towns particularly, intermixed with typhus, just as they also sometimes are with scarlatina, measles, or small-pox. Every such season is distinguished by many seeming remarkable recoveries, and also by many entire failures under the use of febrifuge means, as well as by frequent instances of evil consequences from their employment, such as intestinal hemorrhage and inflammation. It is from the experience of such seasons that apparent support has been yielded to the doctrine both of the conversion and extinction of fever by remedies. Yet it is clear that the mixed constitution of these epidemics affords a constant and ample facility for mistake on the subject.

The commotion of the organs which exists during the tumult of fever, often giving rise to discharges of blood, or, by vomiting and purging, and the restoration of the secreting power which occurs at the period of crisis frequently giving occasion to sweating, catharsis, &c., these excretions have been construed into so many causes of returning health, and have been sometimes induced on this principle by the employment of various febrifuge means.

It is to the undoubted febrifuge properties of certain remedies, such as bark, arsenic, opium, &c., when used in intermittent fever, however, and to the good effects which sometimes proceed from the early employment of the warm-bath, emetics, blood-letting, the cold affusion, purgatives, &c., in the beginning of continued fever, that the expectation of cutting short the affection by such means is chiefly to be traced.

On reflecting on the physiological powers of these agents, it will be perceived that they all tend, either by stimulating the heart when given in depressed conditions, or by quieting it when employed in opposite states, to equalize the circulation. Thus, when had recourse to in the stage of vital torpor, which succeeds the impression of the exciting causes of fever on the nervous centres, those only are suitable which stimulate the system. Of this description are change of air and scene; exercise in the open air in the country, and at a distance from the presumed cause of the complaint; the internal use of stimulants and tonics, the warm-bath, and the exhibition of emetics. And when employed after the tide of vascular excitement has set in, then confinement to bed in a dark room, diaphoretics or sudorifics, purgatives, blood-letting, the

cold affusion, tartrate of antimony, or such other remedy as is fitted to abate the constitutional tumult, is indicated.

It was a favourite object with physicians in the middle ages to discover a febrifuge remedy, which, by exciting a great commotion in the system, might at once stimulate the whole economy, and also carry off the fever by the creation of some discharge. Riverius tells us that he had meditated long on the construction of such a species of bomb, and at last obtained it in a salt got by dissolving determinate quantities of gold, antimony, and quicksilver in nitro-muriatic acid; and, in the present day, it is common to exhibit, as similar explosive febrifuges, combinations of both of the latter metals along with some saline evacuant.

Dr. Brown, one of the surgeons to the Royal Infirmary of Edinburgh, in a paper published in 1802, says that, out of 280 instances registered in the books of that hospital, there were twelve only in which it was noted that the fever had ceased the day that medicine was first applied; but the same writer testifies to the efficacy of certain pills, which were given by the surgeon of the *Namur*, ship of war, to those of the crew who became affected with a fever which was epidemic in the ship. These pills were, from their violent effects, called "Warren's Thunderbolts;" vomiting, purging, and profuse sweating being induced by them, followed often by the dissolution of the fever, and a great reduction of the mortality.

I remember since five grains of calomel, with half a grain of tartrate of antimony, and ten grains of bitartrate of potash, constituted a favourite febrifuge of this kind; and, at present, the exhibition of a dose of blue pill or gray powder, quickly succeeded by repeated draughts of solution of sulphate of magnesia and tartar emetic, is very generally employed; often, in the country, preceded by a full bleeding, as a similar tumultuary cure of fever. The depurating and calmative influence of such tornado-like practice is sometimes well illustrated, when it is employed in the stage of vital depression and torpor of the organic functions which precedes the rigor of fever, or during the first twenty-four hours of vascular excitement which succeeds this; although Armstrong, with a recklessness inseparable from the hop-step-and-leap spirit in which he wrote, declares that he has seen many cases of inflammation of the stomach and intestines distinctly arising from the use of antimonials and salines as febrifuges, and that they generally do a great deal of mischief. It is clear that the cases in which he saw this, must have been instances of the endemic enteric fever of London, in which the treatment was employed after inflammation of the ilium had taken place, that is, probably, after the fourth day, and certainly, in that event, the method would merit all his reprobation.

As the subject of febrifuge remedies is of great practical importance, and also involves the correct appreciation of the nature of

fever, I think it necessary to speak of it more in detail. Before doing so, it may not be improper, however, to refer, for a few minutes, to those means which are supposed to be influential, not in removing, but in preventing fever.

It will be seen that the question of contagion meets us at the first moment of this attempt, and also, that the due consideration of the preventive management must extend beyond what is needful for individuals, to what is demanded by the community.

I will not speak on contagion in the way of battling an abstract argument. With this aspect of the subject I have nothing to do. In the battle of life, however, you will, each of you, frequently be exposed to the influence of two very opposite tides of popular feeling on the topic. One is the nearly universal belief and fear of contagion which has ever prevailed, and, in the existing constitution of the material world, must always prevail; the other, the disposition, amongst mercantile communities, partly to explain away or utterly deny the doctrine of contagion, in consequence of the injury to commercial interests which accrues from it. Both of these views influence the profession, as well as the general community.

Down to, and long after, the time of the Hippocratic school of medicine, the doctrine of contagious disease was held exclusively as a popular belief, and was promulgated, not by physicians, but by historians, philosophers, and poets. The Justinian code of civil law, even, embodied the doctrine of contagion before the subject received a place in the scientific writings of physicians. From the earliest periods, the attention of medical men was directed to the influence of air, moisture, winds, &c., in originating disease, but it was the pressure from without that compelled them to the consideration and the reception of the belief, that, when once so enkindled, fever may be communicated by the contact of one infected person with another. In the present day, whether the question involves a quarantine regulation at our maritime ports, or the formation of a *cordon sanitaire* around a town, or in a family only, the mercantile principle is apt to arise in collision with the hygienic, and medical men require to exert a jealous guard, equally against the commercial infidelity as against the operation of a panic fear. It was only the other day that a physician in this neighbourhood was thus the sole succourer of a stranger seized on the road with the symptoms of cholera, and in this state refused admittance into the adjoining village. And, on the other hand, it is not a great while since some of the boys in an establishment here, being affected with scarlet fever, the master of the institution contended with me on the folly of sending the other boys home, because he had been assured that the disease was not contagious, but "only in the air."

Should a river, for a time, overflow its banks, and a considerable extent of the country or city through which it runs be left

covered with sedimentary deposits and damp, or should a clayey, marshy, or rich vegetable district of land be exposed to protracted rains, in either case with sufficient elevation of temperature, the atmosphere of the locality becomes loaded with animal, vegetable, and aqueous exhalations and products, and it is found, as a matter of observation and experience, that the inhabitants are often, at the same time, extensively affected with fever. Sometimes an atmospheric constitution, the origin of which cannot be so well ascertained, arises in some part of the world, and in an incredibly short time diffuses itself on every hand, affecting whole cities in a single day with influenza, or some other form of continued fever. These are examples, accidental, endemic, and epidemic, of what is called Infection. Another instance occurs when human beings are pent together, for a considerable period, in a deficient atmosphere, as on shipboard, prisons, &c., typhus exantheme is engendered; and in proportion as the locality is overcrowded, and the persons exposed to it fall ill, the atmosphere and general material of the place become charged with the poison of typhus, or are infected.

Should any of the individuals so affected, either with fever or typhus, come into contact with others not labouring under the affection, and who are resident even in a healthy neighbourhood, they communicate to them their respective diseases; or these are what is called contagious.

The enteric fever described by Baglivi, which succeeded an inundation of part of Rome by the Tiber, and the enteric fever, which is the endemic of Hungary and of Great Britain, furnish examples of the two first of my supposed cases, or the accidental and endemial. The epidemic gastro-hepatic, or relapsing yellow fever, which affected most parts of the world in 1843, is a striking instance of the third.

I filled the empty beds of my medical wards at that time with cases of this last fever, but I was soon compelled, by the complaint being frequently communicated to my other patients, to remit all the subjects of it to the fever hospital, after which I had not an instance of it in any of the medical wards. But, in proportion as the fever house got crowded, the clerks and nurses there became largely the subjects of the disease.

As respects the contagiousness of the enteric species of continued fever, you will seldom meet with a sporadic case of it which does not extend itself, unless when a careful separation is enforced, to all the younger members, in particular, of the family in which it appears.

And in regard to the power of typhus to perpetuate itself, you may assume it as a fixed principle, that although its easiest victims are the aged and exhausted, nothing short of the most vigilant insulation and cleanliness can prevent its diffusion amongst all who have not previously been affected by it. I remember a case

of this disease having found its way, by accident, into a medical, that is, a non-fever, ward here, then under the charge of a friend of mine, a warm non-contagionist. It soon became the focus of a small epidemic, four other cases of typhus being quickly produced by it, from among the patients affected with other diseases in immediately adjoining beds. And it is the invariable experience here, when this disease is epidemic, that, although such a thing as the contagion being wafted by the air to localities external to the fever house was never heard of, every unseasoned official who comes into contact with it in the house, is, as a general rule, affected by it.

We are not, unless in the case of typhus, acquainted with the ultimate causes which engender the febrile exanthemes. The ancients supposed them, like other plagues, to be formed in Ethiopia; and the modern Vegetarians, despite the immunity from these diseases of the cannibals in the islands of the Pacific till the arrival there of Europeans, ascribe their existence to the eating of animal food. With continued fever it is different, and in dealing with it we have to bear in mind its atmospheric origin, as well as its contagious nature. That it has a primary connection with atmospheric states, is shown by the rapidity of its extension over all the quarters of the largest cities, across oceans, and throughout extended continents; and also by the changes in type which it often successively undergoes with the different seasons. When more localised, the relation which it has with the state of the weather, the presence in the grounds of moist decaying vegetables, the recent removal of the family in which it appears to a residence distinguished by its temperature, the moistness of its atmosphere, and its rich vegetation, have all a similar interpretation. The histories of individual cases, also, have almost invariably a climatic origin. Thus, in private practice in Glasgow, a majority of the persons affected by it are females and children of the upper classes, who have accidentally got wetted and chilled; and, in hospital practice, our cases of continued fever are principally derived from the more rural suburbs, and from the adjacent country, during the prevalence of cold rains.

Warm, dry clothing, therefore, the avoidance of exposure to cold and wet, and the having speedy recourse to the warm bath, and to rest in bed after any accidental wetting, will prove good prophylactics against fever. A thoroughly well-seasoned house, in an elevated position, removed from the immediate vicinity of trees, or of large reservoirs of standing water, or of vegetable matter undergoing decomposition, will all, also, be valuable preventives. I remember having seen a great deal of an epidemic continued fever, which prevailed extensively throughout the lower, flat, alluvial, and wetter portions of a neighbouring rural parish, while not a single instance of it occurred in the higher and drier part of the same district. And it is a circumstance of constant

recurrence, to find some form of continued fever appearing among the inhabitants of our city on their annual removal to various parts of the country and sea-coast during summer, especially when the season is damp.

As to preventing the extension of continued fever when in actual existence, I think that it is sound ground to assume every form of it, and also every stage, from the first flush of vascular excitement, to the completion of the desquamation of the cuticle, should this happen, to be moderately contagious, and to take your measures on this principle.

These will, in every instance, substantially comprise the segregation of the sick, the cleanness of their bodies, of their bedclothes, and of their apartments, and the purity of the atmosphere they breathe. The nature of the details will necessarily vary with the circumstances; and what will prove useful in continued fever will, *à fortiori*, be expedient in typhus, and the other exanthematous fevers.

Of prophylactic measures employed for the safety of the public community, fever hospitals have always been esteemed among the most important. I have already spoken of the imperative need there is of, at least, 800 cubic feet of air to each patient in these institutions, in order to make them really curative means; and I may be allowed to say here, that, with the same view, a mode of ventilation independent of windows, and of the volition of nurses, is also indispensable. The simplest, most economical, and best suited contrivance of this kind for a fever hospital, is to make an opening of about a couple of inches in height, and a dozen in horizontal length, in the outside wall, between each pair of joists, on the level of the deafening. This admits the external air under the boards which form the floor of the ward; and by placing a perforated metallic plate in the central plank of the flooring, opposite to each opening in the wall, a constant, gentle current of pure air rises up into the lowest, and, therefore, most impure portion, of the atmosphere of the ward, and at a point the farthest removed from the patients. The foul air is easily removed by an opening made in the wall below the ceiling, and communicating, by a flue, with any of the fires or furnaces of the building. Ventilation by means of windows, besides that it renews the ground atmosphere of the wards imperfectly, leaves the patients to the discretion and judgment of nurses, and also, when used, to the evils of a strong, direct current. The practical results are the alternation of the effects of a highly contaminated atmosphere, produced by the closure, with attacks of erysipelas, inflammation of the ears, throat, and lungs, occasioned by the opening of the windows.

It has been alleged, that the number of recoveries in a fever house is proportionate to the earliness of the admission of the patients, and that this, again, corresponds with the willingness of the poor to be received. When speaking on this subject, I desire

to state it as my deliberate conviction, that the plan of short, rotatory medical attendance in fever hospitals, is not the best for securing for them the confidence of the poor, or the lowest possible amount of mortality. It requires a longer familiarity with the numerous details of these institutions, and with the peculiarities of the diseases admitted into them, than is consistent with, say a two years' physicianship, to enable any one to exercise a steady, enlightened, professional superintendence over them. There is no disease, besides, in which it is more needful for the physician to possess a continuous individual knowledge of every particular case, than in fever. The changes in this affection are so constantly occurring, and are at once so important in their nature, and so insidious in their approach, that fever cases require both to be watched and individually known, whether by physicians or nurses, more than those of any other disease. My experience in this department of practice has taught me, that every change in the official staff of a fever hospital, whether this involves the removal of the physician, the clerk, or of the nurse only, is fraught with danger to some of the patients.

As regards the prophylactic influence of fever hospitals, I think it was Dr. Currie, of Liverpool, who asserted that every single removal into the house of recovery there, probably prevented the occurrence of two or three cases of the disease. I wish I could believe this of every other fever hospital. The truth is, that, during seasons of pressure for room particularly, when the average residence of the patients in the house is short, when there are, perhaps, no convalescent wards, and when, owing to the want of a separate building for the retention of persons too well to be kept in the fever house, but whose skins, and other secreting surfaces, as the lungs, &c., are still desquamating, and whose health is still too little confirmed for it to be safe for them to mix with their families at home—fever hospitals, instead of limiting, are often the means of spreading the disease.

With these remarks, on the means of preventing, I proceed to offer some observations on each of the principal expedients had recourse to for checking a fever.

1. And first, as to the analogy of the power of quinine in ague, I do not believe that there is anything in it as respects continued fever. In the gastro-hepatic species of fever, in which a crisis takes place on the fifth or seventh days, followed by a period of perfect health, which continues for other five or seven days, when a violent relapse occurs, I have, in multitudes of instances, given sulphate of quinine during the intermission, sometimes in small, frequently repeated doses; at others, in monster quantities. The patients were kept in bed, and on light regimen; or they were put on generous diet, and permitted to walk about; their bowels were carefully regulated, and sometimes they were allowed to change the air by returning home; but the steady experience was, that

the relapse came on as uniformly as when the cases were let alone. In typhus, again, which has often, but erroneously, been asserted to be a pernicious intermittent, and in which the alleged febrifuge and curative powers of sulphate of quinine have recently been advocated on mistaken principles, I have also given this remedy, during different epidemics, and in all sorts of the disease—in the old, the young, men and women, severe and mild, and in doses frequently of four grains every four or six hours—and I have never seen it exert any power in shortening typhus, or operate otherwise than as a stimulant, enabling me, in the cases in which it was used, to do with somewhat less wine.

2. The warm bath has been sometimes useful in the commencement of fever, and has been supposed competent even to its arrest. It is employed for this purpose either during the rigor, or when the head has begun to be excited, but before perspiration. The ancients would not use it unless there was, at least, incipient moisture on the temples, and had a wise fear of employing it at all when there was visceral disease present. I certainly would never put any one into a bath above 98° of temperature, who has either hypertrophy of the heart, or enlargement of the liver or spleen.

The object in view, in its use, is to equalize the circulation, by determining to the peripheral vessels. A very accessible and summary method of doing this is to seat your patient, enclosed in blankets, on a kitchen chair, under which a plate, containing a couple of ounces of spirit, in a state of combustion, has been placed. At other times, when the person is unable to sit, the same thing may be expeditiously and effectually done, by sending a current of heated air under the patient's bedclothes, by means of a spirit-lamp. Place one extremity of an arched piece of tin under the outer lateral edge of the bedclothes, and put a lighted spirit-lamp under the other end. Then raise the bedclothes by means of a stool, or a hoop or two, so as to secure a current, and in a few minutes your patient will get warm. Or an equally summary way of restoring the heat, is to wrap the patient in a warm wet sheet, and pack him all round with dry blankets. In a very short time the face will begin to get florid, and the sweat to flow. Should you have the opportunity of a hot vapour or of a hot water bath, either of them may be taken at a temperature of from 100° to 120°, and the patient may be kept in either till he is fatigued. In the case of a very weak person, it may be expedient to allow him to recline in bed, and employ only the foot-bath, with mustard. This is done by placing the pail of hot water at such a level, as will permit the patient to lie easily with his head on the pillow, and his legs in the water. Then legs and pail should be enclosed in blankets for half an hour, or an hour. If it is a child that you are called to treat, your best plan is to wrap up the body, as far as the armpits, in a warm, wet blanket,

and cover all over with a sufficient number of dry, warm bed-clothes.

The late Dr. Armstrong had the strongest views on the utility of the warm bath, but especially of that of the hot-air bath, of any who have written on the subject. He alleged, with great truth, that this form of applying heat does not fatigue the patient like the warm bath, and that in half an hour it will bring pounds of blood to the surface, which were previously suffocating some internal organ, and that it will produce perspiration, and restore the balance of the circulation sooner than any other remedy.

I will only add that, if you have an ephemera to treat, any of these modifications of the hot bath will expedite its dissolution; but should your case be the result of the gradual incubation of any form of continued fever, you will fail. The fever will run its course, but the bath will accelerate the stage of febrile excitement, and, should it not have been very hot or long-continued, no evil will accrue from its use.

3. Along with the external application of heat, a very common method of attempting the resolution of a threatened fever is the employment of stimulants by the stomach or rectum. I have seen beneficial reaction induced very expeditiously by means of forty drops of laudanum given during the stage of depression and rigor subsequent to receiving a chill, and it is sometimes useful to combine this, in such circumstances, with a similar quantity of sulphuric ether. A teaspoonful of brandy, or a tablespoonful of warm sherry, given every ten or fifteen minutes, in the same condition, will often restore the heart's vigour, and, should irritability of the stomach prevent their use by the mouth, they may be given in double or treble quantities by the rectum, either with hot water and turpentine, or tincture of ginger.

There are some sanguine, self-complacent practitioners who loudly assert that brandy is the sovereign specific against every stage of fever, and that they can stave off an attack of the disease, even after the circulatory excitement has commenced, if not by a glass of punch, at least by making the patient drunk. These modern Asclepiadii are quite as popular, and also as correct in their therapeutics as the Homœopathist empirics, who, before the time of Hippocrates, professed to strangle fevers by means of alum and other astringents, given internally, and applied in cataplasms to the hands and feet.

4. Emetics also have been had recourse to, in the expectation of breaking the fever. They act, like the hot bath, on the principle of inducing reaction, and, like it, they require similar limitations in regard to the presence of organic disease.

Frequently a rigor is induced by a loaded stomach. I have a patient, a healthy gentleman of seventy years of age. Should he happen to exhaust his vital powers by fatigue or exposure to cold, and, in that state, indulge in a hearty meal, he is seized with a

violent rigor, followed by stupor, some loss of voluntary power and imperfect reaction, which continue till he is freed from the fermenting mass of undigested food by means of gentle emetics, and by purgatives. It is a remark of Celsus, that bile in the stomach often excites shivering; and here, also, an emetic will frequently bring an alarming assemblage of fever symptoms to a close. Nausea and inclination to vomit are common effects of the presence of undigested food or of bile on the stomach, and when present in what seems likely to become a fever, it has always been a usual and excellent practice to give an emetic.

But this species of febrifuge remedy is often employed both to unload the stomach, and to equalize the circulation. The splanchic congestion which obtains in the first days of enteric fever, particularly in the portal circulation, exhibits itself by great tenderness and sense of oppression in the epigastric and hypochondriac regions; a red tongue slightly painted with bile, and a shrunk state of the general surface of the body. Here a gentle vomit of ipecacuanha is often followed, not only by a discharge of bile from the stomach and also by stool, but also by a restoration of the heat and secreting power of the skin, and by a removal of the precordial load. Many physicians have supposed that they have quite arrested the progress of enteric fever in this way, and there is good reason to believe that the succeeding fever has, at all events, been often much modified by these means.

It was a favourite method of breaking a fever, practised by the late Dr. Richard Miller in this hospital, to determine to the skin by means of an emetic and other appliances. His formula was as follows:—

“About eight o'clock in the evening I order the emetic—generally ipecacuanha—after the operation of which the patient is enjoined to bathe the feet and legs in warm water, during at least a quarter of an hour or twenty minutes, and upon retiring to bed he is to swallow a large dose of Dover's powder. Sweating soon commences, and it is to be supported and encouraged by tepid diluents. This method, when administered early enough, I have found singularly successful. My chief experience of it has been among the nurses of our Infirmary, when they happened to catch the contagion. With them I have seen it repeatedly dissipate every symptom of fever. Upon visiting them next morning, I found that, after profuse sweating during the night, the pulse had come down, that the headache, with the pains of the back and limbs, had vanished, that the tongue had regained its moisture, and that nothing remained but a little debility; in short, that all those threatening signs had disappeared, that, if left alone, would have soon matured themselves into a regular and genuine typhus.” And Dr Miller subjoins the histories of similar seizures, treated in the same way, in two of his Fever Hospital clerks, with equally happy results.

Dr. Miller, in the manner universal at the time he wrote, employs the term typhus here as a convertible name for fever. Whether his success was equal to his own estimate of it is, I think, open to doubt. Clerks here are often in fear of fever when their chilliness, want of appetite and spirits, nausea, head and back aches, and disturbed circulation depend on cold, to which they are the more liable from the indigestion and loss of constitutional tone incident to their often remaining too much within the atmosphere of the hospital; and, as to fever nurses, it is really not usual to see them falling quite so thickly under the disease as appears to have been Dr. Miller's experience, although every one knows that, as a class, they often subject themselves to other very potent causes of temporary tumult in the circulation.

Emetics are sometimes still employed, as they often were in ancient times, after the fashion of a fever-pump, by which the germs of the disease are expected to be raised from their lurking places in the body to be eliminated by the gastric surface. It was objected to their use for this purpose formerly, that not unfrequently the patient was freed of his spirit (*animam suam evomuit*) rather than of his fever by this means, and the objection remains as good in the present day as it was when first employed.

Sydenham had nearly constant recourse to emetics on the access of fever, but where reaction had begun, and much acceleration of the circulation had appeared, he recommended that their use should be premised by the detraction of blood.

5. Blood-letting is another alleged febrifuge which, potent both for good and evil, has been employed to an immense extent, and from the most opposite motives, whether in the prevention or treatment of fever. In this hospital we rarely have the opportunity to test its power as a febrifuge, but in an epidemic of simple continued fever which I saw in the country in 1821, a number of persons came under my care at an early stage of the symptoms, in whom, after the application of external heat for the removal of the coldness, and the detraction of a quantity of arterialized blood, the tumultuary fever was sometimes speedily dissipated. A couple of large bleedings in one highly plethoric man, seemed competent to occasion no more than a remission. A perfect dissolution of the symptoms occurred for twenty-four hours, after which they returned and a crisis was got only on the 21st day. It is needful to add that there were cases of this fever on which blood-letting had no influence, unless it was a noxious one. Delirium of a most outrageous kind seemed to be sometimes induced by it in nervous, excitable habits, and in one case in which it was largely employed in the outset, it appeared to give rise to the symptoms of intense apoplexy. Such appearances of determination of blood to the head have been long known to be excited by the loss of blood, although the fact has again of late been recurred to as a general principle by the ingenious Dr. Marshall Hall.

In a similar short inflammatory form of continued fever which succeeded a typhus epidemic in Edinburgh, and some cases of which I saw, the same appearance of the dissolution of the fever by the aid of profuse blood-letting was observed. There is little doubt that the cessation of the fever in these cases after bleeding, was more dependent often, however, on the fever than on the remedy. The fever was essentially a short one, but was confounded with the typhus which had preceded, and to some extent accompanied it. My cases are described in the first volume of the *Glasgow Medical Journal*, and those at Edinburgh in the first volume of the *Library of Medicine*, and in Dr. Welsh's treatise on the fever of that period.

Bleeding is, especially in country situations, a remedy less likely to do harm than most other alleged febrifuge means; as, even when the disease was typhus, I have never seen a single blood-letting at the outset do harm. There is a wise remark which I have read somewhere—“*Sanguis frænat nervos* ;” and in typhus the disturbance and disorder of the nervous system is one of the great evils of the disease; yet, whether it was from lessening the quantity of circulating mass, and thus diminishing the extent of the venous congestion which afterwards occurred, and which is one of the chief causes of death in typhus, or from whatever cause, I have never seen any evil arise from bleeding in the outset even of typhus. There is, as there has ever been, a class of active practitioners who, whether from an innate, constitutional spirit of restless effort, or from a nervous, silly desire to escape the critical reflections of others by practising in a mechanical, routine way all that has been recommended as useful, leave “no stone unturned,” as they say, to insure the destruction of the fever. I have had cases of typhus sent in from the hands of such men, and also frequently of enteric fever, but I can frankly say that I have not seen a tithe of the mischief done in typhus by the lancet, which I have seen in enteric fever by drastic purgatives. I think that the employment of blood-letting in typhus is generally a mistake. I know there are some physicians—Dr. Armstrong, for example, asserted that he had bled in typhus to more than a hundred ounces, with a marked febrifuge effect. Dr. A. was misled by his own nosology. His typhus, in the form of it in which he thus bled, was, he says, Cullen's synocha, but neither would he, nor any of the advocates for the unity of essence of typhus and continued fever, have followed such a practice with what they called pestilential typhus—the typhus of these lectures. You would not, if in your sane mind, try to treat a supposed case of typhus fever by blood-letting, if the case presented itself to you during an epidemic of that disease, or if the patient had recently been exposed to any contagion.

But it has been in the attempted destruction of some of the forms of simple fever, and not of typhus, by blood-letting, that this

remedy has been mainly found either beneficial or not hurtful. The similarity of many of the symptoms of fever to those of inflammation, their tumultuous vehemence, and the fact that young persons are its most usual subjects, as well as the frequent occurrence, sometimes with useful effects, of profuse hæmorrhages during its course, have all tended to suggest the employment of blood-letting as a febrifuge. The ancients believed that fevers could often be cut short *in limine*, or, as it was afterwards called by Willis, "crushed in the egg," by this means, when employed before the third day; and Van Swieten thus records:—"Ut Galeno, sic febrem curanti, adstantium quis dixerit, O homo! jugulasti febrem!" This latter writer, followed by Botallus, Sydenham, Clutterbuck, Armstrong, and others, thought that blood should be taken at the beginning of an ardent fever to syncope, and that, by so doing, the body, even though the fever was not at once destroyed, would be so lightened as to insure a short and easy illness; but it was mainly from the reports of those engaged in the treatment of the climatic fever of warm or fenny countries, of the marvellous power of copious detraction of blood in arresting fever at a single stroke, that the practice obtained a footing with ourselves in recent times. I must refer you to the writings of Mitchell, Rush, and other American physicians, as well as to those of our own Jackson and others, for the interesting proofs of the high prophylactic value of full depletion of blood on the first day of the fevers of warm latitudes; and, also, to the periodical literature of the day, for many striking instances of the value of the practice at the outset of continued fever at home, in the beginning of the present century. But I cannot dismiss the subject without cautioning you, that the records of medicine, especially those of the middle ages, are full of frightful examples of the ruinous consequences of blood-letting when employed freely in certain forms of epidemic continued fever. I believe it to be chimerical to expect to arrest the progress of a fever by blood-letting later than the second day; and, also, that it is wrong to repeat this remedy when the second sound of the heart has become prolonged, or when the murmur of the larger arteries on the application of the pressure of a stethoscope is found shortened.

6. The form of fever in which venesection has been chiefly alleged to prove competent to the extinction of the disease has been the cephalic, and here its use has been often succeeded instantly by the employment of the cold affusion with the same purpose. The sudden impulse on the system of this remedy is said to have induced sweating and sleep, and thus to have frequently at once cut short the disease. The usual mode of applying it has been to pour, say a couple of gallons of water on the patient while standing in a tub, and to repeat it during the first and second days of the disease as often as the heat of the skin returned. The mode by immersion has also been sometimes adopted. In warm

climates, cold water has been productive of eminent advantage at the outset of fever, and both externally and internally its use has been resorted to from the earliest periods as indeed the only *febrifugum magnum*. At the commencement of the present century, the reports of Dr. Currie regarding its use in fever took strong hold of the profession, and as late as 1815 I remember seeing it resorted to in this hospital. I think Dr. Clutterbuck speaks of having seen the cold affusion practised here in 1803, and that it was then often followed by catarrhal and inflammatory seizures. Be this as it may, it is a means which for many years has been discontinued in the latitude of Glasgow, unless by the hydropaths, in whose hands it is certainly an agent fraught with much danger to the unfortunate fever patient who is subjected to it.

7. The only other febrifuge agents of which I shall speak are purgatives. These have formed an element of every formula for the tumultuary or short method of curing fever, from the bleeding, sweating, diuretics, and emeto-cathartics of the Dogmatists before the days of Hippocrates, down to the tartar emetic, calomel, and black draught of the present time. In the more expectant methods of treating fever adopted by the Father of Medicine, and even as late as the time of Sydenham, while the supposed power of purgatives to attract the noxious principle of the disease to the intestinal surface was not disputed, certain notions about the necessity of "thickening the fever," prior to its expulsion, prevented their early employment. It was Stoll of Vienna who was the first strongly to recommend their use in the arrest of bilious fever, and, on the principle, "*sat cito, si sat bene*," he gave them on the first day, often, he says, with the effect of dissolving the disease. Their use became popular subsequently in the bilious fevers of America and the West Indies, and in the beginning of the present century the late Professor Hamilton of Edinburgh, from having observed that antimonials, when given in fever, as recommended by Cullen, were often followed by benefit when they produced catharsis, introduced the exhibition of purgatives into the treatment of fever in this country. His object was restricted to the moderate evacuation of the contents of the bowels, but his authority was instantly made the warrant for a system of daily profuse purgation in fever which reigned here, and was practised also on the Continent, until, first, the doctrines of Broussais, and, afterwards, the more matured and accurate views of succeeding writers, made us acquainted with the frequent direful consequences of the plan when practised in enteric or typhoid fever.

I do not think there is room for hesitating on the employment of febrifuge purgatives in the cephalic species of fever, after the patient has been blooded according to his strength, or in the gastro-hepatic, or even, in a cautious way, in the thoracic, but it is more difficult to determine how far their use may be ventured on, and on what principles, and with what expectation of either

stopping or shortening the fever in the enteric or typhoid form of the disease. I believe that every one who has had much experience of this kind of fever will have been often disappointed in the results of all exclusive modes of treatment in it, whether expectant, antiphlogistic, evacuant, sedative, tonic, or stimulant; and that every such practitioner also will have frequently met with instances of apparent arrest of the complaint, especially when recourse was had to remedies calculated to unload the mesenteric system. In the second and subsequent weeks of enteric fever, there is often nothing between the abdominal cavity and the contents of the bowel other than the attenuated peritoneal coat, and sometimes large openings may be observed after death even in it, which have been plugged up by masses of feculent matter. In such circumstances the paramount importance of rest and quiet of the bowel will be apparent, but, in the first week of the disease, the chief element in the affection, in addition to the disturbance of the nervous centres, is a condition of sanguineous congestion of the abdominal viscera. The symptoms at this time, such as febrile reaction, anorexia, nausea, red tongue painted with bile, pain in the pit of the stomach and forehead, and, perhaps, diarrhoea, strongly suggest the propriety both of bleeding from the epigastrium, of warm fomentations, tepid baths, strict diet, and also of largely diluted and mild saline purgatives. Now, I have seen instances of this nature, which were also caused by cold and not by contagion, and which, therefore, were more likely to be amenable to treatment, fail to receive benefit from such means, and I have also seen them prove eminently successful. I think that the proper course in regard to the exhibition of purgatives at the outset of enteric fever, is to select those which, by producing large watery stools, are fitted to unload the mesenteric vessels, as, for example, sulphate of magnesia in a state of great dilution; and that, should the case not manifest improvement within forty-eight hours, the treatment on this principle should be discontinued.

In relation, finally, to the previous topics referred to in this lecture, I believe that I am safe in affirming that a true ephamera may exist independently of a local inflammation, and that its conversion into a more protracted form of fever may be prevented by treatment. I think that there is evidence, farther, that a fever, when dependent on causes suddenly applied, as cold or insolation, may be greatly modified by active treatment at its commencement, but that no fever which has a lengthened incubation period—that is, which depends on the introduction of a poison into the blood for several days before the symptoms appear—can be prevented running its normal course.

The head, the liver, the veins, the presumed air in the arteries, and, in modern times, the arteries themselves, have been adopted as the seat of fever. Van Helmont, who was a remarkably acute, although eccentric person, declared, with a pertinacity and dog-

matism which have scarcely been exceeded in modern times, that every fever was situated in what he called the "first shops;" that is, in the stomach and bowels. Chirac, a Frenchman, who wrote in the end of the seventeenth century, boldly insisted on the head being the deadly source and seat of the disease. The same notion was taken up and revived by Marcus in Germany, and at the time that France was resounding with the exaggerations of Broussaism, Clutterback, Armstrong, Mills, and others in this country, were quite as earnest in inculcating the figment of congestion or inflammation of the brain as the cause of every fever. The phantom of cerebral congestion haunted the minds of young practitioners here at that time in a way which was often most destructive. I remember having had my own jugular vein opened very gratuitously when a little dyspeptic, by one of these, otherwise a man of first-class education. The country was full of great bleeders from this cause; and practitioners of standing, even, had often to yield to what was accounted the progress of the age. I once, when acting as a clerk in this House about that time, was got by a senior physician to bleed a patient privately who was covered with livid typhus blotches. Not having any knowledge of typhus more definite than the sliding scale of Cullen, he was without fixed principles by which to test and withstand a strong professional clamour; and, like many others in similar circumstances, he was betrayed into the absurdity of removing blood from one in whom the vital forces were already fast verging to extinction. Leeching and cupping of the head, and opening the temporal artery, were all at that time in high repute in fever, from the prevalence of the same notions of its pathology. I visited the Cork Street Fever House, Dublin, in 1815. Besides arteriotomy, which was frequently practised there, the work of leeching the temples was going on during my visit, with a heartiness quite unequalled by anything I have since seen of the use of the same remedy, except when employed a few years later for the removal from the stomach and bowels of an analogous imaginary parent evil. Many of the alleged cures by bleeding were obviously febriculæ only, going to hospital under the impulse of panic, and some of these, in which bleeding was ordered, got well by the fourth and fifth day, although from different causes the bleeding was not performed. In other instances of the then Irish fevers, bleeding was no doubt had recourse to from the temporal artery in genuine typhus without much apparent evil ensuing. It was employed either when there was smart reaction still present, and its injuriousness then was not very obvious, or during the stage of subsidence and collapse, when a quantity sufficient to occasion present sinking was seldom detracted; yet it has been recently asserted that this innocuousness of bleeding in the public fever hospitals did not always exist. Dr. Stokes, in his second lecture on fever, avers, on the authority of an apothecary, that, at the time now referred to, it happened

over and over again that the patient died while the leeches were upon his temples—died as surely and as suddenly as if shot through the head; his informant asserting that, when an apprentice, “there was hardly a week that he was not summoned to take off a large number of leeches from the dead body!”

Since the cerebral and gastro-enteric hypotheses of the seat of fever have fallen into disrepute, there has been a greater disposition to recur to the doctrine of its essential, independent, or specific nature than for some time before, and to consider the disease in the light of a universal affection of the whole organization, to observe the individual symptoms of each seizure, and to treat its different cases in their varied aspects on the obvious and acknowledged principles of general medical science. This is very much the old Cullenian hypothesis of fever, and, provided the ordinary sequences of functional disorders which it presents be recognised as its special and not its accidental phenomena, and that typhus, as arising from a different animal poison, as consisting of peculiar, and, compared with continued fever, entirely opposite pathological conditions and effects, and as requiring a distinct and special mode of treatment, be shut out from the field of inquiry which the theory would regulate, I have no objections to it. Continued fever is an essential disease of the whole animal system, although in some part of its course becoming more distinctly localized, the situation and nature of the anatomical or secondary lesions varying according to circumstances.

(To be continued.)

IV. *Case of Vaginal Cystocele, treated by Mr. I. B. Brown's Operation.* By JAMES H. HOWIE, M.D., Helensburgh.

MRS. M——, aged 37, is the wife of a tradesman, was married at the age of 17, and has borne nine children. About twelve years ago, she was first conscious of the protrusion of a small tumour from the vaginal orifice, but this only happened after unusual exertion in the performance of her household duties. At this time she had no pain, or even uneasiness, in the hypogastric or lumbar regions, and the functions of the bladder and of the bowels were perfectly normal in their action.

Two years after the first appearance of the tumour, she gave birth to twins after a severe and protracted labour, and soon afterwards the tumour became considerably larger, and she began to have occasional attacks of dragging pain in the lumbar region, resembling those of labour. Along with these she had frequent calls to micturate, and the urine had often a fetid odour, and a thick muddy appearance, as she describes it. During the next half-dozen years she had three of her children, and after each

birth she observed an increase in the size of the tumour, and in the severity of the symptoms above described. She now also suffered from constipation, and, for several years past, she has had invariably to have recourse to aperient medicine to procure the necessary evacuations, which were always accompanied with considerable aggravation of the dragging pain, and with the further protrusion of the tumour. The most distressing symptom, however, during the last twelve months, has been the severe pain in the hypogastric region, and the inability to retain the urine for any length of time. Her sufferings were only mitigated by the recumbent posture, and even this, for the last six months, had failed to give relief. In addition to the above symptoms, she had fits of palpitation, frequent chills, succeeded by flushing and profuse perspiration, and occasional violent hysterical paroxysms. The only treatment she received was occasional doses of laudanum.

I saw her first about five months ago, when she gave me the above account of her case. On making an examination, I could reach the *os uteri* with the finger, and found it in its normal position; there was, however, evidently great relaxation, and some protrusion from the vulva, of the anterior wall of the vagina, which was easily enlarged by coughing or straining, even in the recumbent posture, and became as large as the clenched fist after she had walked about a little. The urine was fetid and alkaline, had a copious phosphatic deposit, and was voided frequently, in small quantities, and with great pain.

I concluded that her symptoms chiefly depended on the prolapse of the bladder into the pouch formed by the relaxation of the anterior wall of the vagina, and was of opinion, from the pain and difficulty in moving the bowels, that even the *posterior* vaginal wall might also be somewhat relaxed, and that this would increase the sufferings of the patient when the rectum was impacted with *faeces*. Taking this view of her case, after clearing out the bowels, I introduced an india-rubber bag, of the size of a small orange, as a pessary, to which was attached a flexible tube for inflation, and prescribed dilute phosphoric acid with iron and quina, which has been found beneficial in such cases by Dr. Golding Bird.* She gradually improved under this treatment, and in the course of two or three weeks was so well as to be able to attend to her household affairs, and to walk about, to her great satisfaction, and the surprise of her friends, who had imagined her bed-ridden for life.

She over-exerted herself, however, and was soon prostrated by a return of her former symptoms; the same treatment was continued, but failed in affording the relief which it did at first. In these circumstances, I proposed to the patient to submit to an

* *Medical Times and Gazette*, January 7, 1853.

operation, as the only prospect of affording a relief to her sufferings, for she said that she often wished for death rather than continue to endure such misery. The operation which I had in view was that first performed and recommended by Mr. Isaac Baker Brown, about two years ago,* for vaginal cystocele, and which he has since performed several times with success.

The patient most willingly consented to submit to anything which was at all likely to alleviate or remove her sufferings, and accordingly I operated on the 23d of January last, with the assistance of my friends, Dr. Wallace of Greenock, and Mr. Skene of this place.

The patient, after being put under the influence of chloroform, was placed as in the position for lithotomy, and kept so by means of bandages. A sponge of fitting size was introduced into the vagina, to prevent the protrusion of the tumour, and the labia then held aside by one of my friends on each side. A piece of mucous membrane, about an inch and a quarter long and three-quarters of an inch in breadth, was then dissected from before backwards, just within the orifice of the vagina on the right side, the upper edge of the denuded surface being on a level with the *meatus urinarius*, and the edges of the wound thus formed were brought together by three interrupted sutures. The same process was repeated on the opposite side. A strip of mucous membrane, about an inch in breadth, was next dissected off just within the labia, laterally and posteriorly, in the shape of a horse-shoe, the upper edge of the shoe commencing on each side, about half an inch below the wound first made within the orifice of the vagina, care being taken to remove the whole of the mucous membrane close to its junction with the skin of the *labia majora* and of the perinæum.

The sponge was now withdrawn, and three deep interrupted sutures of strong twine, doubled, were then introduced about an inch from the edge of the vulva on the left side, and brought out near the edge of the dissection *within* the vulva; carried across to the opposite edge of the denuded surface on the right side of the vulva, and brought out through the skin on the right side, about an inch from the outer margin of the wound made by the removal of the mucous membrane. The sutures so introduced were then tied firmly to quills on each side, and thus brought the deep portion of the opposite sides of the wound perfectly into contact, and kept them so. Three interrupted sutures were then passed through the skin in the perinæum, so as to bring the *outer* edges of the wound neatly together. A flexible catheter was now introduced into the bladder, to which was attached an india-rubber bag, for the purpose of keeping the bladder constantly empty. Water dressing was applied to the wound, and the patient put to bed.

* *Medical Times and Gazette*, April 16, 1853.

She was ordered to have two grains of opium immediately, and one grain every six hours after.

For two or three days she was rather feverish, but had no other unfavourable symptom. The opium, which was intended to soothe, and to prevent the action of the bowels, answered these purposes, and was discontinued in two days. The deep sutures were removed on the eighth day, and the superficial on the ninth after the operation, and union was found to have taken place. The catheter and elastic bag were withdrawn on the sixth day, as they seemed to give rise to irritation of the bladder, and the catheter was employed night and morning. In a day or two she could void urine naturally, although the calls to do so were still frequent. The bowels were opened by castor oil on the fifth day, after which the slight fever abated, and from that time she has never had an untoward symptom. She was permitted to sit up a little out of bed ten days after the operation, and in five days more she was walking about the room, without the least appearance of external protrusion of the tumour, and without the slightest pain.

February 10th.—The urine can now be retained for five or six hours, and she enjoys a good night's rest. The bowels are daily moved, naturally and painlessly. She has had no aperient medicine for eight or ten days. She is profuse in her expressions of gratitude for the great relief which she has experienced from the operation, and begins to enjoy life anew. She has, however, as well as her husband, been warned, that if she ever has another child, the whole of her former symptoms will almost to a certainty return, as the act of parturition would completely rupture the new perineum and the vaginal contraction which have been obtained by means of the operation.

There is good reason for supposing that this distressing affection had not, till lately, received such attention and investigation from the profession, as the severity of the symptoms demanded, and that it was frequently confounded with *prolapsus uteri*. Dr. Golding Bird seems to have been the first exponent of the true pathology of the malady. "I am persuaded," he says,* "of the possibility of tracing a very large proportion of cases of fetid phosphatic mucous urine in the female, to the imperfect emptying of the bladder from prolapsus of the anterior vaginal wall. Every one is well aware of the frequency of enlarged prostate as a cause of this state of the urine in the male, and the circumstances to which I have now drawn attention will be found to be as frequent a cause of this state in the female. In more than one instance, I have seen complete prolapsus of the uterus produce a similar result, evidently by drawing the bladder out of its position, and thus interfering with its being perfectly emptied at the will of the patient.

* Medical Times and Gazette, Jan. 7, 1853.

So far as I have seen, the ailment in question is nearly, although not exclusively, confined to females who are called upon for laborious exertion, generally too soon after their confinements; or, in other words, to those who are most subject to uterine displacements. Certainly, I have met with but very few cases in the higher ranks."

But it is to Mr. Isaac Baker Brown that we are indebted for the introduction of the operation which, in several cases under his care, and in the above under mine, has proved a most effectual cure for this affection. The object sought to be attained by this operation was the contraction of the vagina, which was excessively enlarged and flabby. This was accomplished *laterally* by the first part of the operation, so as to prevent the tumour falling down from above; while posterior contraction, increase of the perinæum, and reduction of the vaginal orifice to a third of its former size, so as to prevent the protrusion of the tumour if it should not be restrained by the lateral contraction, and to throw it upon the artificial perinæum, were obtained by the second part of the operation. "As is proved by the result," says Mr. Brown, in speaking of his first case, "all the objects sought have been fully attained, and it is scarcely possible to imagine a more satisfactory result from any operative procedure."

V. *On Dental Decay*. By FRANCIS H. THOMSON, M.D., Glasgow.

FEW questions are more frequently put to the practitioner than those pertaining to dental caries, and it is to be regretted that but a fractional portion of those, in the department devoted to the practice of dental surgery, are able to give satisfactory answers. This is caused partly from the conflicting theories of Hunter, Fox, Bell, and other contemporaneous writers, or from ignorance; this latter reason, however greatly to be deplored, is much the case amongst the dentists of this and other countries.

The above-mentioned writers all concur in the view that caries almost always, if not invariably, proceeds from some undefined inflammation arising in the interior of these organs, and that, therefore, all caries is developed from within, and gradually comes to the surface. Facts bear us out in thinking the very reverse to be the case. Caries, or gangrene, seems to be an improper term to apply to disease in the teeth, as, under every circumstance, the destruction of these organs is produced, not from any suppurative process, but merely from the abstraction of the phosphates and carbonates, by the change which takes place in the saliva from

alkalinity to acidity, in various diseases and states of the constitution; it will therefore, perhaps, be necessary that the composition of the teeth be noted, as laid down by Berzelius, Rhetzius of Stockholm, Purkinge, Muller, Owen, and many others, in the course of their physiological investigations.

The teeth are composed of enamel, bone, dentine, and a substance which has received various names, such as cortical, *crusta petrosa*, and denominated cement by Owen. The enamel is almost entirely composed of phosphate and carbonate of lime, with a light proportion of organic matter.

ENAMEL contains:—

Phosphate of lime, with fluoride of calcium,	88.5
Carbonate of lime,	8.0
Phosphate of magnesia,	1.5
Membrane, alkali, and water,	2.0

The osseous portion, or dentine, hardly differs from true bone. Berzelius found therein:—

DENTINE:

Cartilage and vessels,	28.0
Phosphate of lime, with fluoride of calcium,	64.3
Carbonate of lime,	5.3
Phosphate of magnesia,	1.0
Soda, with chloride of sodium,	1.1

In the cortical was found:—

Organic matter,	42.18
Phosphate of lime,	53.84
Carbonate of lime,	3.98

Thus showing that enamel is entirely destitute of organic matter.

The cortical has even more organic matter than the dentine. It may thus be seen that writers on dental caries have every reason to suppose, that disease may be similar in its origin to caries in the bones, seeing that in some kinds of dental caries the result appears to be much the same. But any one in the habit of examining diseased teeth may observe that the alkaline portions are always abstracted, whereas, in true caries, it is the organized matter which is lost; and although there may be exceptions to this regulation, yet, in most cases of caries, the process has been the result of inflammation causing suppuration.

The result of experience tends to show that dental caries is produced by mechanical causes and external influences; and if such be the case, the reason must be evident why the alkaline portions are always abstracted and the vascular or organized left.

It may be necessary to change the term caries to decay, or

simple death of the part, and as all subdivisions should be avoided, decay may be classed under two heads—

SIMPLE AND COMPOUND.

Before going into what is the proximate cause of decay, it may be as well to touch on the most commonly accepted theories promulgated by the writers above named.

"The proximate cause of caries," writes Mr. Fox, "appears to be an inflammation in the bone of the crown of the tooth, which, on account of its peculiar structure, terminates in mortification. The membrane which is contained within the cavity of a tooth is very vascular, and possesses a high degree of nervous sensibility, and inflammation of the membrane is liable to be occasioned by any excitement which produces irregular action; and as the bone of the tooth is very dense, and has little living power, a death of some part of it may speedily follow inflammation of the vessels of the membrane which is contained within the cavity. When this membrane becomes inflamed, it separates from the bone, and the death of the tooth is the consequence."*

Mr. Bell differs from Fox, in so far that he makes out the proximate cause of caries to be an inflammation of the external surface of the bone immediately under the enamel. He writes—"The true proximate cause of caries or gangrene is inflammation, and the following seems to me to be the manner in which it takes place:—When from cold, or any other cause, a tooth becomes inflamed, the part which suffers most severely is unable, from its possessing comparatively a small degree of vital power, to recover from the effects of inflammation, and mortification of the part is the consequence."

Mr. Hunter has come nearer to the true cause, as, although he says that caries is a disease arising originally within the tooth itself, he evidently had a strong opinion that the different articles containing strong menstrua had an effect in assisting caries. Although he held this opinion, it is evident his theory went no further than the possibility of transitory damage caused by the passage of acid food over the surface of the teeth in its way to the stomach; and on experimenting he found this action to be so slight, that he concludes by leaving the subject in the same state, viz., that caries has its origin in the interior of the teeth.

The teeth, being furnished with a living membrane, and all of them possessed of the same bony structure, should, according to these views, be all subject to the same symptoms, and no class, therefore, should be more frequently the seat of decay than another; yet it is a fact, admitted by these authors, that this is not the case, for all speak of external and internal, superficial, lateral, deep-seated, and many other subdivisions of decay. Mr.

* Fox, Nat. Hist. of Teeth, Part II., page 12.

Fox says, that the molars are more subject to caries than the other teeth; that the incisors of the upper jaw are often affected, but those of the under seldom or never. But were the different arguments used upon this subject to be discussed here, the object of this paper would be departed from—which is to give a short explanation of what appears to the writer to be the true cause of decay.

To elucidate the views adopted, it will be necessary to trace to its true source that morbid process by which the teeth are gradually and insidiously destroyed, and it may be as well to speak of simple decay as the first division of the subject.

Simple decay is that which is found in the molars principally, showing itself on the crowns where the enamel meets, from its points of deposition, four in the under and five in the upper, and discoverable at first by a crucial formation of dark lines—the first indication of the decay visible to the eye.

It may be necessary slightly to speak of the peculiar mode of development observed by nature in the formation of the teeth, differing as they do from the other *bones* of the frame.

Each tooth is derived from a separate pulp, observable as early as the fourth month of gestation. These pulps are highly vascular, having an investing membrane, also supplied with its complement of nerves, veins, and arteries. These pulps derive their vessels from the artery which passes along the jaw, and the membranes directly from the gums. The bone of the tooth is formed from the pulp, and the enamel from the investing membrane. The osseous matter is deposited on the extreme points of the pulps from the vessels. In the incisors it begins upon the edges, and in the molars upon the points of the grinding surfaces. These ossific depositions soon extend over the surface, till the whole pulp is invested. The enamel secreted from the investing membrane is deposited on these ossific points, in the shape of a fluid that is at first of the consistence of cream, passing into a chalky substance, soon, however, becoming hard, and seeming to undergo a process of crystallization, for it takes a regular and peculiar form. When fractured, it appears to be composed of a number of small fibres, all of which are arranged to pass from the centre to the circumference of each point of deposition. As the fetal formation proceeds, new particles are evolved, gradually enlarging each circle of radiation, till all meet in the centre of the grinding surface of the tooth. In the healthy organization becoming agglomerated, and forming a strong covering to the more delicate bone structure below, and much less liable to decomposition. But should the development be interfered with in the fœtus by the casual disturbance of the circulation during the period of gestation, it is invariably seen that the vigour necessary for the healthy exhibition of the bone and enamel, is wanting. Thus generally, from an un-

healthy pregnancy, the teeth are found to be imperfect. This may not be observed in childhood, as no great note is taken of the first teeth, but, in the permanent teeth, decay is invariably developed at some period, and generally before puberty, when, from the unconfirmed substance of the teeth, and imperfect junction of the enamel plates, acid evolved in different complaints, produced by a delicate organization, and in after life superinduced by an artificial mode of existence, attacks the bone through the imperfect joining of the plates. In such states of constitution the saliva is more or less acid, and although these acids, found in excess in unhealthy, are also to be discovered in normal saliva, experiment has ascertained that they are destructive to the bone of the tooth. Much acid may also be evolved by the food indulged in, and, although not the primary cause of decay, in all probability much increases the carrying out the destruction of these organs. The saliva, according to M. Donné, is in its normal state purely alkaline, and this conclusion is now followed by most physiologists. The pathological condition of the stomach, induced by an acid state of the saliva, is irritation of the mucous membrane; and he contends that this condition usually induces or is accompanied by acidity of the saliva. Besides giving the result of his experiments in arriving at these conclusions, he has narrated a number of cases illustrative of the corresponding change from acidity to alkalinity as the patient recovered from disease.

It may be proper to give the results of some experiments which have been carried out with regard to the action of acid agents on the teeth, and it will not be difficult to show, that in various diseases these same acids are evolved.

First, Both animal and vegetable acids act on the bone and enamel of the teeth.

Second, Alkalies do not act on the enamel.

Third, Salts, whose acids have a stronger affinity for the lime of the teeth than for the bases with which they are combined, are decomposed, the acids acting on the teeth.

Fourth, Vegetable substances have no effect upon the teeth till after fermentation takes place, but all of them capable of acetic fermentation act readily after the acid is formed.

Fifth, Animal substances act very slowly, and even in a state of putridity are tardy in their action.

Sixth, Acetic acid so corroded the enamel of a tooth which was placed in it, that in twenty-four hours all that remained could be easily scraped off with the nail. Citric, mallic, muriatic, sulphuric, and nitric acids soon decompose the teeth (and yet how often are those exhibited in medicine without any precaution being used!)

Having thus mentioned the different acids which have effect on the teeth, it will be easy to show that many of them are

evolved in certain diseases impregnating the saliva, and thence acting on the teeth.

Simon, in that part of his learned work on animal chemistry, devoted to the investigation of morbid secretions, says, that "the saliva becomes affected in different morbid conditions of the system, but the nature of the changes that it undergoes has not been hitherto sufficiently studied. Morbid saliva sometimes contains a free acid. This is most commonly lactic, but in some cases acetic is also present. The acid reaction may at once be detected by test paper. While normal saliva communicates a blue tint to red litmus paper, this, on the contrary, reddens blue paper. I have frequently," he continues, "seen the saliva acid in acute rheumatism, and in cases of salivation."

According to M. Donné, the saliva has an acid reaction in all cases of irritation and inflammation of the stomach, in pleuritis, encephalites, intermittent fevers, acute rheumatism, uterine affections, and amenorrhœa. Brugatilli detected oxalic acid in the saliva of a phthisical patient. The secretion of saliva is sometimes increased to an extraordinary degree, constituting salivation. In such cases the chemical characteristics of the saliva are more or less affected. He detected true acetic acid in the saliva of a patient who had just terminated a course of mercury. The saliva was very viscid, of a yellow colour, and possessed of a sickly disagreeable smell. The results of his experiments decidedly prove, that in almost every case where he tested morbid saliva, some acid was found, each more or less having an agency in the decomposition of the teeth. His experiments on morbid gastric juice are most interesting, but too elaborate to be more than hinted at in this paper. He says the increased acidity of the gastric juice usually arises from an excess of those acids which exist in a normal state, viz., muriatic, acetic, and lactic acids. When there is a tendency to the formation of an excess of acid in the gastric juice, it appears to be developed from the food—muriatic principally from animal, acetic and lactic from vegetable, especially such saccharine food as bread, beer, and wine, and the fatty acids from an excessive use of fatty matters. Excessive acidity is frequently observed in scrofula, rickets, associated with disease of the spleen, also in gout and nettle-rash.

Having thus given a slight account of the different acids evolved in the saliva and gastric juice when in a morbid state, and having also asserted that decay of the teeth usually, if not always, is found as the result, it may safely be inferred that the saliva so constituted is a most active agent in their destruction. First, it is found that, from a delicate gestation, diseased pulps are exhibited, consequently irregular action in the deposition of the bone and enamel; and, as much delicacy and irritation is usually in such cases evinced after birth, causing a morbid state

of the secretions, thus laying the foundation of decay, and interfering with the proper development of the teeth, yet this may be so far arrested by the adoption of peculiar treatment and diet. Although decay of the first teeth may not be very evident till near the time of changing, and not much taken into account, yet the action of the different secretions is even more powerful in them than in the permanent teeth; and minute investigation of the molars, the first of which in the second set appear above the gum about the seventh year, will distinctly show the irregularities of the deposition of the enamel before described; and the slightest attack to which children of that age are always more or less liable, such as scarlatina, measles, &c., by producing peculiarly acid states of the saliva and gastric juice, will much increase the process of decay, not very easily accounted for in many cases, and doubtless observed by all practitioners. This decay may be defined as that which is observable on the crowns of the molars, and that insidious decomposition which takes place so often at the junction of the enamel and bone portion of the tooth where the gum begins.

Although these views of simple decay may not be entirely original, seeing that various authors have slightly alluded to the effect discernible from the action of the different acids on the bone and enamel, no one has described this as the proximate cause of decay, for all talk of internal inflammation of some kind or another being the cause. Inflammation may be the result, but certainly never the cause of decay, for it must be a practically ascertained fact, that pain never exists in a decayed tooth till the nerve becomes inflamed. Now, if this inflammatory action showed itself before the appearance of decay, severe pain would be the result. This, according to the experience of patient and practitioner, never does take place, and toothache proper is only felt when, from the pressure of the decayed mass upon the nerve and vessels in the interior, disturbance ensues. It cannot be denied that much pain is often felt in the interior of the tooth when no decay is visible, but arising from a totally different cause. When, from cold, sudden shock, or constitutional change, inflammation is produced in the interior of the tooth, the result is not visible decay, but suppuration of the nerve itself, which is relieved by exudation through the fangs, causing gumboil and all its attendant miseries. Gumboil also is often the result of a decayed tooth, but this is when, either from injudicious stopping, or from the pressure and non-removal of decayed matter, the discharge resulting from inflammation cannot evacuate itself into the decayed cavity. As a result of this internal inflammation, various well-known complaints arise in the mouth, such as exostosis, ankylosis, and caries of the sockets.

The second class of decay may be named compound, and is that which is found between all the teeth, but more especially in

the incisors and bicuspidæ, and denominated lateral decay by many writers. It appears at first as a mere point, gradually increasing till absolute decomposition ensues. It is in treating this part of the subject that a distinct knowledge of the vascularity of the teeth becomes of such importance in the elucidation of a correct diagnosis of this disease. Compound decay would appear to derive its origin from stoppage of the circulation, caused by too close contact of the teeth; for, as no isolated tooth is ever primarily attacked, or teeth where the enamel has become developed before contact, some may say the enamel is not vascular, and therefore no damage can take place from contact. But lateral decay never does show itself, except where, from deficiency of the enamel, the bone of the tooth is exposed or very imperfectly covered, and the tooth in contact with its neighbour. In tracing this class of decay, it should be borne in mind, that, in nine cases out of ten, compound decay is developed before puberty, when the teeth are very highly organized, and consequently more likely to suffer from any stoppage of the circulation.

Compound decay may take place at any age, but this is caused by the action of morbid saliva carrying on what may have commenced in infancy, arrested by a strong and healthy boyhood, and again becoming developed by an attack of fever, consumption, or even salivation. The object in making use of the term compound is, that after the morbid condition of the teeth, caused by impeded circulation, has taken place, it may be much increased by the action of the saliva and gastric juice in their morbid states. Hunter observed, that, when caries is communicated by contact, it probably is caused by the action of some acrimonious discharge from the decaying tooth, which, in the first place, occasions a decomposition of enamel, and afterwards of the organs themselves; but there is this peculiar difference, that in the one, decay proceeds from the interior to the exterior, whilst the other commences on the surface. What is there in this to lead one to the true cause? He has, on the one hand, left the proximate cause of true decay much in doubt, and, on the other, only hinted at the action of some discharge, the specific nature of which he does not define. It must be well known to all versant with this subject, that no discharge ever does appear but such as is produced by inflammation going into suppuration, and his theory is rendered still more fallacious by his assertion, that decay must be instituted before any discharge can take place.

From the preceding remarks it must be obvious, that all those who practise dental surgery ought to be acquainted with every department of medical science. A mere mechanical practitioner can never, in the long run, be useful. The more the medical and surgical knowledge of the dentist, the more will he be enabled to alleviate pain or suffering; and the better a man is acquainted with the whole of the healing art, the more successfully will he

devote himself to any department to which he may direct his energies. Hitherto, with few exceptions, this branch has been the refuge of those who could succeed in no other, or, what is worse, has much fallen into the hands of uneducated or partially educated adventurers, who, having acquired a few of the manipulations and some knowledge of the mechanical part, have, by bold effrontery and unscrupulous statements, imposed on the unthinking portion of the public. As knowledge advances, the less will be the success of the uneducated and designing; and all who are, each in his own department, lending a hand to put down quackery in all its branches, are diffusing such a knowledge of natural phenomena, that men, knowing and obeying the Creator's laws, will enjoy the best health, mental and physical, consistent with our present imperfect state of existence.

VI. *Report of Cases treated in the Glasgow Cholera Hospital during the late Epidemic.* By JOHN CRAWFORD, M.D., one of the Physicians to the Hospital, and Medical Officer of the City Parish Poor-house.

IN the *Medical Journal* for April, 1854, I gave an abstract of the cases of cholera which had been treated in the Glasgow Cholera Hospital up to the 1st of March. In the present paper I propose to give an abstract of all the cases treated in the hospital till its final closure at the end of November last, when the epidemic, after having prevailed for nearly a twelvemonth, may be considered to have finally disappeared; and I shall add a few remarks upon some points of practical interest or importance,—chiefly such as can only be decided by the examination and analysis of a large number of cases, under conditions favourable to continued and minute observation.

The following table exhibits a synopsis of the cases admitted, and their results, the designations indicating the form of disease which each case, *on admission*, presented:—

	DIARRHŒA.					CHOLERA.					COLLAPSE.					Grand Total.
	Adults.		Children.		Total.	Adults.		Children.		Total.	Adults.		Children.		Total.	
	M.	F.	M.	F.		M.	F.	M.	F.		M.	F.				
	Admitted..	79	153	17	7	256	119	219	12	12	362	97	125	8	5		235
Recovered,	67	135	14	6	222	87	184	8	10	289	12	21	1	2	36	
Dead,.....	12	18	3	1	34	32	35	4	2	73	85	104	7	3	199	

Classification of Cases.—It will be observed by the readers of the Journal, that the same arrangement and threefold division of the cases is followed in the above table, as that adopted in my

former report. All that I have seen of the epidemic which has now run its course, confirms me as to the great advantage, in a medical and statistical point of view, of this classification. It may be necessary to remind my readers, that under cholera—according to the official instructions for making the returns to the Board of Health—were to be included “cases of looseness of the bowels accompanied with vomiting, or cases of rice-water or serous purging with or without cramps.” In by far the greater number of cases, however, tabulated above as cholera, *all* the three symptoms usually designated as characteristic of the disease were present—viz., serous purging, serous vomiting, and cramps in the extremities. In a few cases, especially during the first three months of the epidemic, this last symptom was wanting; but in these instances the well-marked serous character of the evacuations, the rapid prostration, the peculiar affection of the voice, and the sunken eye, with the livid areola bordering the hollow orbit, were abundantly sufficient to identify the malady. In cholera, as in other diseases, one even of the symptoms most strikingly characteristic may be absent or little marked, but this deficiency may be amply made up by the well-defined manner in which several other symptoms are concurrently exhibited. I have formerly shown, that in fully developed cholera, and even in collapse, the dejections may not always present the characteristic “rice-water” appearance. In the same way, cramps may be absent in some instances, and in others vomiting may be nearly altogether wanting, and yet no one accustomed to see cholera can entertain a doubt as to the true nature of the disease.

Among the minor characteristics of genuine cholera, I know no one more striking or more uniformly present than the appearance of the eye and orbit above alluded to. It is palpable to touch as well as sight; the finger can be passed round the eyeball in a deep groove, especially at the under margin of the orbit; the areola is usually well marked, and altogether the appearance of this organ in cholera is quite different from the sunk and hollow eye of long-continued and wasting illness. The difference is due to the rapidity with which the alteration takes place in cholera. Rapidly, however, as it is induced, it is slow in wearing off, and I have repeatedly, in examining patients progressing to convalescence, who had not been under my immediate care, ventured, by attention to this point, to give an opinion as to whether the case had been one of severe diarrhoea or of developed cholera, and I scarcely recollect of having been mistaken in the inference in any case.

The distinction between cholera and collapse is not so easily drawn as that between diarrhoea and cholera; and yet, considering the great difference in the rate of mortality, and in the efficacy of treatment in the two stages, it is desirable to fix some criterion which may indicate the line of demarcation. The official instruc-

tions above quoted are rather vague on this subject:—"Under collapse will be included only cases of collapse, or where suppression of urine has taken place." The only definite test here suggested is one which may not be capable of application *at a given moment* in the progress of a case, even supposing that suppression of urine is always present in collapse. It requires some lapse of time before it can be predicated of any particular case. Many patients were admitted into the hospital in a state of perfect collapse, who had made water an hour or two before. But *in the interval* the patient had fallen into collapse: no more water was made for a long time; perhaps none at all was subsequently passed, death having but too frequently rapidly supervened.

The distinction, however, is a real one, and, like many real distinctions, more easily recognised in practice than described in the language of formal definition. I believe very few practitioners who saw much of the late epidemic would have had any difficulty in agreeing among themselves, on examining a given patient, as to whether the appropriate designation was cholera or collapse, although undoubtedly, as the one stage passes by successive though rapid gradations into the other, they might have recognised in the case an example of this transition state. All the cases set down in the above table as collapse, were characterised by a depression of the circulation and the other vital functions, so great and general, that the pulse, if perceptible at all, was reduced to a mere thread, seldom admitting of being counted; the body was cold all over; the breath and tongue also cold; (these two last phenomena, however, I have witnessed in cholera, when the general depression was not such as to warrant the appellation of collapse, and when the other indications of that state were absent);—the surface dusky from imperfect depuration of the blood, and the function of the kidneys for a succession of hours suspended or materially impaired.

Rate of Mortality.—The above table exhibits the following proportions between the recoveries and the deaths in the various forms of disease treated:—

	Per centage of Recoveries.	Per centage of Deaths.
All cases, including Diarrhœa, Cholera, and Collapse,	64.13	35.87
Cholera and Collapse together,	54.44	45.56
Cholera alone,	79.83	20.17
Collapse alone,	15.32	84.68

It is not very easy to institute a comparison between this rate of mortality and that observed in the cholera hospitals in Glasgow during the former epidemics, as the results will depend very much upon the principles on which the cases treated in these hospitals were classified and designated. My friend Dr. Lawrie has been so kind as to place at my disposal the statistics which he has preserved of the Albion Street Hospital in 1832, and of the Clyde

Street Hospital in 1848-49, both of which enjoyed the great advantage of his services and superintendence as physician. In the records of these hospitals the cases are simply divided, according to the characters which they presented on admission, into collapse, non-collapse, and premonitory. The latter are but few in number, compared with those classified as diarrhoea in the present report, being 33 in the Albion Street Hospital, all of which are marked as having recovered, and 37 in the Clyde Street Hospital. The other cases, 1062 in the first-mentioned hospital, and 974 in the second, are described as admitting of "being fairly set down as cholera." I have no personal experience of the epidemic of 1832, but I can well understand that on the occasion of that, the first visitation of the disease, comparatively few cases would be sent to hospital unless they presented the features of the dreaded "Asiatic cholera." In the epidemic of 1848-49, however, I should have thought that more cases of choleraic diarrhoea would have found their way into the hospital, than the 37 described as premonitory. In that case, a comparison founded on the assumption that the 974 cases "set down as cholera" would all, on the principles of classification adopted in the present report, have ranked as cholera or collapse, is scarcely fair as regards the hospital practice in the late epidemic. Even on this assumption, however, the results are gratifying.

There is another mode of comparison, for which the data are furnished by Dr. Sutherland. In Appendix B. to the Report of the General Board of Health on the Cholera of 1848-49, when contrasting the relative mortality in cholera treated in and out of hospitals, he states that the official returns from the three cholera hospitals in Glasgow (the Clyde Street, Woodside, and Bridgeton) give a mortality in cholera cases, *i.e.*, cholera and collapse, of 54·7 per cent.

The following table gives the comparative view of mortality founded on these data, the deaths being calculated per cent. :—

	Deaths in Total Cases admitted.	Deaths in Cholera alone.	Deaths in Collapse alone.	Deaths in Cholera and Collapse together.
Albion Street Hospital, 1832,...	64·66 ...	49·01 ...	90·13 ...	66·67
Clyde St. Hospital, 1848-49,...	49·36 ...	26·57 ...	80·31 ...	51·23
Aggregate of the three Cholera Hospitals, 1848-49,.....	—	—	—	54·7
City Hospital, 1853-54,.....	35·87 ...	20·17 ...	84·68 ...	45·56

It will be observed, that while the mortality in cholera has much diminished in our hospital practice, as compared with that in the Clyde Street Hospital in the previous epidemic, the mortality in collapse is greater. I have no hesitation in ascribing this increase to the greater distance to which, in the last epidemic, the majority of the patients who were removed to hospital had to be conveyed. The hospital in Clyde Street was situated in close and convenient proximity to an extensive central district of the

town, densely inhabited by the poorer classes; and besides, in the epidemic of 1848-49, two other hospitals, one in the extreme east, and the other in the extreme north-west of the city, were established to meet the necessities of the population in these outlying suburbs. The hospital in Parliamentary Road, the only one in use during the last epidemic, though otherwise admirably adapted for its purpose, was comparatively out of the way. In fact, nearly a fourth of our cases of collapse were admitted actually moribund. I entertain a strong feeling against the propriety of removing any case of collapse to an hospital; but the objections to such a course are augmented in a direct ratio to the distance which the patient has to traverse.

Predisposing and Inducing Causes of the Disease.—In my former report, I mentioned that I had been much struck by the preponderance of dark-haired patients among the cases admitted during the first months of the epidemic; so much so, that I had caused an entry to be made in the journals, specifying the colour of the hair and iris in each case. Since the 1st of March this has been done in general with great exactness, although occasionally, during the pressure of the epidemic, the record was omitted to be made. Deducting these omissions, and also the cases in which the hair was grey, we have, out of the 402 cases of cholera and collapse admitted since the above-mentioned date, 353, in which these peculiarities were carefully noted. The result is as follows:—

Hair dark, iris grey,	.	.	.	.	.	172
Do., iris black,	.	.	.	.	.	45
Do., iris blue,	.	.	.	.	.	43
						<hr/>
						260
Hair and iris light,	.	.	.	.	.	82
Hair red,	.	.	.	.	.	11

It is to be observed, that the cases described as light-haired were, with the exception of the children—almost all of whom fall under this category—chiefly examples of the different shades of brown; very few of the adults were what is ordinarily termed *fair-haired*. Having paid considerable attention to the cases on their admission, with a view to this point, I feel convinced—and what I have seen of the epidemic in private confirms me in the opinion—that the *bilious temperament* is peculiarly obnoxious to malignant cholera, and that individuals presenting the constitutional *ensemble* which characterises that temperament, are more predisposed to the disease than those of the sanguine or the lymphatic. Trifling as the circumstance may appear to be, it is not unworthy of notice; for, in the investigation of a disease so mysterious as cholera, every fact, however apparently trivial, which may serve as a stepping-stone in a future induction, has its value.

Of course, the great majority of patients who find their way to

a cholera hospital in a large city, belong to those classes which, from their position in the social scale, their habits of life, and their localities of residence, are exposed to many of those unfavourable hygienic conditions, which predispose the system to the attack of any prevailing epidemic. The history of the late visitation, indeed, has proved that the ravages of cholera are by no means confined to those classes; but, so far as the cases embraced in the present report are concerned, there naturally existed a very great degree of uniformity in respect to exposure to those conditions. It was remarkable, also, how difficult it was to elicit any information in regard to exciting or inducing causes. Very seldom, comparatively speaking, could the patients assign any cause which they blamed for bringing on the disease. Want, destitution, or hardships, were assigned by very few. The most common causes to which they attributed their illness were—and the order in which they are named indicates pretty accurately the comparative frequency with which they were respectively assigned—drinking, excessive or unwonted use of vegetables, especially new potatoes, and other irregularities or excesses in diet; exposure to cold, fatigue, or wet; and the use of purgative medicines.

With reference to one of these causes, and that the most frequently assigned by the patients themselves, namely, drinking, the result of our experience is, that the injurious effect of a debauch, in inducing the disease, operates, in general, a day or two after the excess. After the immediate effect of that excess has worn off, leaving the individual depressed, and the digestive organs deranged, it would appear that the predisposition is greatest. In the case of the lower class, the danger is doubtless aggravated by the want of any of the comforts, and even, in many instances, the necessaries of life, consequent on the improvidence which too frequently leads them to squander, in the reckless indulgence of a day or two, the earnings of a week of labour. Hence, during the prevalence of the epidemic, we soon came to recognise, as an almost invariable result, which we anticipated as a matter of course, that the general returns of out-door cases were heavier on Tuesdays and Wednesdays than on any of the other days of the week. On the other hand, excesses or irregularities in *eating* took effect more speedily. In many instances, a meal of new potatoes, or indigestible fish, was followed, in a few hours, by a sudden attack of cholera, or choleraic diarrhoea. Several examples occurred of a meal of this kind, taken over night at supper, being followed by a sudden attack of cholera in its worst form, before the patient's ordinary time of rising in the morning.

Another of these occasional predisposing causes may claim a passing notice, as having some interest in reference to ordinary medical practice—I allude to the apparent effect of purgatives in bringing on an attack of the disease. In some of the cases in which this cause was alleged, bowel complaint had actually begun

before the purgative was taken; in others, it was taken or given to relieve constipation. In one instance, the patient—an inmate of the poor-house—an infirm and debilitated female, whose constitution had been shattered by a difficult and dangerous labour many months before, and who was constantly tormented by vomiting of a hysterical character, took of her own accord two compound colocynth pills. Purging came on, but she attributed it to the medicine, and made no complaint; incessant vomiting supervened, but her fellow-inmates, who had so often seen her affected in a similar way, were not at all alarmed; and when application was made for advice, she was found to be sinking into collapse. The purgatives thus alleged to have induced the disease were very various. Epsom salts, with senna or cream of tartar, had been taken in several cases; aperient pills in others, and even castor-oil was stated to have had the same effect.

It is doubtless a prudent rule to avoid as much as possible, during the prevalence of epidemic cholera, the employment of powerful drastic and hydragogue purgatives, and, I would add, of the saline purgatives, which, to insure their efficiency, are generally given dissolved in a large quantity of cold water; and individuals who persist in physicking themselves at such a time unquestionably run some risk. But I think that the danger to be apprehended from the use of purgatives, due regard being had to the patient's state, and the nature of the affection calling for their use, has been somewhat exaggerated. We have very frequently, in the sick wards of the poor-house, cases of ascites, of the kind in which the use of elaterium, jalap, and gamboge is found so beneficial; and during the past year, these remedies were repeatedly prescribed in such cases (though, in general, not until other means of treatment had been exhausted), without, in a single instance, inducing any approach to cholera.

Indeed, I am inclined to suspect that the timidity of patients and of practitioners, leading them to avoid the use of purgatives and even of laxatives, during the prevalence of cholera, has sometimes had the very effect which they sought to shun; namely, inducing a predisposition to the disease. Habitual constipation is no guarantee against cholera; and in some of our very worst cases, the bowels were costive up to the period of the attack, or till a very short time before it. There can be no question that a torpid condition of the liver, a loaded state of the stomach, the presence of irritating matters or vitiated secretions in the primæ viæ, are all conditions to be avoided, or, if present, to be removed as speedily as possible, during the prevalence of cholera. A few grains of hydr. c. cretâ, combined with pulv. rhei comp. (an excellent and safe aperient, which has been absurdly condemned as dangerous at such a time), two or three grains of calomel, with pulv. aromatic. comp., or in the form of pill, with the extract of hyoscyamus, and followed by a little tincture of rhubarb, with,

perhaps, the addition of a small dose of Rochelle salts, dissolved in a couple of ounces of water, are in such cases safe and appropriate medicines. Hyoscyamus, in particular, in the form of tincture or extract, according to circumstances, is an excellent adjunct to purgatives, when we wish to avoid over-irritation of the stomach or bowels.

Premonitory Symptoms—Relation of Diarrhœa to Cholera—Varieties of Cholera as regards the Mode of Invasion.—In my former report, I gave the results of the inquiries instituted as to the existence of a premonitory stage, in the cases admitted up to the 1st March. In reference to the cases of cholera and collapse (402 in number) admitted since that date, even greater pains were taken to insure accuracy, the patients having been carefully and minutely questioned immediately on admission, and the evidence of their relations, or those who had been in close contact or intimacy with them, having been also obtained in all cases in which it was possible to do so. The particulars thus elicited were carefully noted down at the moment; and I have, consequently, every confidence that the results are as correct as any that have ever been submitted on the subject. But before giving these results, I think it right, not only in order to explain the mode in which I have tabulated them, but also, from the great inherent practical importance of the subject, to offer some general observations on the point.

In the first place, I may remark that, although these results refer only to one symptom, diarrhœa, our inquiries fully corroborate the statements of many competent observers, that that is by no means the only premonitory symptom. Others, of a less definite character—sometimes co-existing with the diarrhœa, sometimes preceding it—sometimes present when the diarrhoeal stage was awaiting, brief or little marked, but evidently precursors of the developed disease—were occasionally noted. Of these, the most common were chills or a feeling of cold, indigestion, nausea, loss of appetite, weakness, and headache. But in most cases these were slight, not much noticed at the time, and chiefly recalled when the serious illness took place, or when the patient's memory was stimulated by interrogation.

Diarrhœa, however, is a symptom which possesses a much greater value and significance. Both in reference to the preservation of the health of individuals, and the protection of that of communities, it is of importance that a correct estimate should be formed of its precise relation to developed cholera. On this point, it can scarcely be affirmed that a complete uniformity of opinion exists among the medical profession. On the one hand, the medical officials of the Board of Health, in their reports, and also by the tenor of the directions which they issued to the different local bodies during the two last epidemics, so expressed themselves as to convey the impression, that the immense majority of cases

of diarrhoea occurring during the epidemic were effects of the cholera *poison* or influence, and differed from cholera, either in being the results of an exposure to that influence in a less concentrated form, or in being arrested before the morbid condition had time fully to manifest itself. On the other hand, there have been some private practitioners who have been struck by the differences between ordinary bowel complaint and cholera, as occurring in their own practice at the same time—who have found diarrhoea troublesome, intractable, and tedious, yet never passing into the cholera which was raging around,—and who, therefore, in the words of Mr. Grainger, “contend that true cholera is a distinct disease from the commencement, and not to be confounded with the prevailing affections of the alimentary canal.”

It was, perhaps, natural that the medical officers of the Board of Health should incline to take a somewhat one-sided view of the subject. When they entered on their duties in the epidemic of 1848–49, they found themselves in presence of a disease which was looked upon as the opprobrium of medicine; the impotence of medical skill to suggest a remedy for it had been strikingly exemplified in its former visit to this country; one plan of treatment after another had been tried apparently in vain; one by one each vaunted nostrum, when brought to the test of experience, had been exploded; and, in these circumstances, they impressed upon the public the necessity of acting on the preventive system, when so little was to be hoped from the curative. The advice had been given in the previous epidemic, but had been too much overlooked in the search for specific remedies. Even the practical application of the principle, in the form of house-to-house visitation, had been proposed; and on a small scale, and in one or two localities, had actually been put in practice. But it was reserved for these gentlemen to systematise this mode of meeting the disease, and to induce the authorities in infected districts to put it in operation on a large scale. Local bodies were sometimes slow to move. Parochial chancellors of exchequer would sometimes stand aghast at the embodiment of a regiment of medical militia, with staff and machinery complete. But, with great energy, the medical inspectors carried their point, and thereby, undoubtedly, averted a large loss of life, and in many places checked the spread of the disease. Conceding this success to them, we may yet be allowed to suspect that they naturally enough somewhat overrated the results, very beneficial as these unquestionably were, of the system. Certain it is that they pointed so triumphantly and emphatically to the long array of figures in their returns, denoting the numbers of cases of diarrhoea discovered and treated by their house-to-house visitors, as to convey the impression that the great proportion of these, if not all, were cases of cholera nipped in the bud, and that, in their reports, there is at least a tendency to represent cholera as an epidemic, the nature of which is to go on

increasing, in a fearful geometrical ratio, till cut short by their favourite plan of tactics.

I should be very sorry to be misunderstood on this subject, or to be supposed to overlook the importance of paying attention to diarrhoea as a precursor of cholera. I have seen nothing in the progress of the epidemic to induce me to retract my former statement that I concur with Dr. Sutherland, that "it is absolutely necessary for *practical purposes* to consider every case of diarrhoea in localities affected by cholera as part of the epidemic." Every case of diarrhoea occurring during an outbreak of cholera is, in the strict sense of the word, *premonitory*; it conveys a *warning* which neither the patient nor his medical attendant ought to disregard. But at such a time, as at other times, we have diarrhoea arising from ordinary causes; diarrhoea, however, which, although its origin has nothing to do with the epidemic, may, if neglected, pass into cholera. This species of diarrhoea, instead of being the first stage of cholera, or the result of a small dose of the epidemic poison, is simply, so far as its relation to cholera is concerned, a *predisposing cause*. It is this species of diarrhoea which the official reports published under the auspices of the Board of Health perhaps rather overlook.*

But that there is, during such an epidemic as that through which we have passed, a large amount of diarrhoea, choleraic in its origin and its character, no one whose field of observation has been extensive can doubt. The relaxation of the bowels is unattended with much pain or uneasiness, the alvine evacuations, which are watery and profuse, seem to give relief, and although there is great tendency to debility and even to prostration of strength, the patient insists on believing that the bowel complaint is salutary, and, in the slighter cases, is with difficulty persuaded of the necessity of confinement and a suitable regimen. Very frequently, when this diarrhoea has, through neglect, lapsed into cholera, he will state that he had so little pain or uneasiness that he thought nothing of the ailment. The great majority of the cases of diarrhoea sent into the hospital were, of course, of this choleraic kind; and it would be obviously inaccurate to regard the relative proportions of the two species of diarrhoea met with in the hospital, as indicative of the ratio which they bore to each other out of doors. In reference to the mode of invasion, I am led, as the

* Two very bad cases, which were admitted under circumstances strikingly similar, within a short time of each other, may illustrate my meaning. The patients were both seamen; both had recently come off a long voyage; both had laboured on shipboard for upwards of a fortnight under diarrhoea, which continued up to the time of their landing at Glasgow, and both were a few days afterwards attacked with cholera of the worst type. In these cases the original diarrhoea was evidently not choleraic in its origin; but no sooner were they brought within the range of the epidemic influence, than the previous ailment acted as a predisposing cause, rendering them liable to an attack of the prevailing distemper.

result of my observation and inquiries, to think that we may recognise three different classes of cases of cholera:—

I. Cases having a distinct premonitory diarrhoeal period,—whether the diarrhoea is to be considered as the first stage of the fully developed disease—the first effect of the virus, so to speak; or whether its origin is traceable to some other cause, and it is therefore, as above explained, to be viewed as constituting a predisposition to the more serious affection. It is necessary, however, to bear in mind that the latter species of diarrhoea will often pass into the former. Many of our cholera patients distinctly stated that the bowel complaint was at first attended with pain—even with spasms in the abdomen, and sometimes tenesmus; that, subsequently, as the evacuations became more watery, the pain left them; that then vomiting came on, and, lastly, cramps in the limbs. The pains in the bowels and the cramps in the limbs were, in many such cases, the opposite extremes of the chain of symptoms. Further, this succession was observed chiefly in the cases where the premonitory diarrhoea was of considerable duration, the order being—ordinary diarrhoea (predisposing), choleraic diarrhoea, and cholera.

II. Another class of cholera cases occurs, in which severe serous purging comes on suddenly, attended with great prostration from the very first; the patient, however ignorant or careless, feels himself very ill, and has to desist abruptly from his usual occupation; the stools from the first are serous, but some hours (four to twelve, perhaps) elapse before there is urgent vomiting, and then probably a further period before cramps make their appearance. How shall we designate these cases in the earlier part of their course? In some of the reports during the epidemic of 1848-49, they were described as “rice-water purging, approaching cholera;” and some would style the purging up to the time when vomiting becomes urgent and cramps are experienced, premonitory diarrhoea. I think that they ought to be described as cholera from the commencement. In many instances the purging is as serous and as profuse as in cases where vomiting and cramps are present; the seizure is sudden and without premonition, although for a considerable period only one of the symptoms of cholera is prominently marked, and the patient's state is very different from that of an individual in the premonitory period of the first-mentioned class of cases. Most of our hospital patients, in whom the disease began in this way, had the other symptoms of cholera developed by the time of their admission—the removal having evidently, in some of them, hastened the development of these symptoms; but so many described their seizure as having occurred in this manner that I have tabulated these cases separately from both those where there was a distinct premonitory period, and those where the developed disease was preceded by no diarrhoea whatever.

III. Cases of cholera without premonitory diarrhoea. Some

writers in the medical periodicals in which this question has been much discussed—occasionally with an acerbity which, if the subject were of a less serious character, would be amusing—have asserted that cholera is invariably preceded by diarrhoea. If by cholera is meant collapse, I believe that there are few, if any exceptions to the rule, and can assent to Mr. Grainger's opinion, that he "doubts whether any case whatever of collapse occurs without a premonitory stage," especially as he qualifies this statement by the admission, that diarrhoea is not the only premonitory symptom of cholera. But that cholera may attack a person without any previous warning in the shape of bowel complaint—and be developed so rapidly, that to call the earliest evacuations which are poured forth from the bowels a premonitory diarrhoea is an abuse of language—I cannot conceive that any one who witnessed the late epidemic can deny. An individual goes to bed in perfect health, and is awakened by a pressing necessity to go to stool; he has a gush of watery fluid, which appears as if it would never stop; he crawls back to bed cold and squeamish; in ten minutes or so he has to evacuate the bowels as freely as before, becomes immediately sick, vomits profusely, and the discharges both from the bowels and stomach take place almost uninterruptedly till cramps come on. Can we call the first one or two of these alvine evacuations premonitory diarrhoea, without involving the whole subject in illogical confusion? In some sudden seizures, the first stool, though copious, has not the serous character, and the patient, till the next call, feels uncomfortable, and then has a profuse liquid discharge, followed by the train of symptoms just mentioned. But neither here can we, with any regard to accuracy, call the first stool premonitory. I admit the truth of all that has been said as to the difficulty of eliciting information from confused or ignorant patients, and even that the "number of the cases supposed to be without a premonitory stage invariably diminish in proportion to the care and accuracy of the investigation;"* all I can say is, that no pains or labour were spared to insure care and accuracy in the investigation of which I give the results:—

Of the 402 cases of cholera and collapse admitted from the 1st March till the closure of the hospital,—

A distinct premonitory diarrhoeal period existed in	-	-	186
Serous purging suddenly developed, attended with rapid prostration, preceded by several hours the other symptoms of cholera, in	-	-	77
Sudden seizure (all the symptoms of cholera being developed in close succession), without premonitory diarrhoea, occurred in	-	-	86
From the state of the patient, no trustworthy information could be obtained, in	-	-	53

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* Mr. Grainger's Report.—Appendix to Report of the General Board of Health on the Epidemic Cholera of 1848-49.

Of the first of these classes of cases, the particulars as to the duration of the diarrhœa are as follow :—

Duration under 12 hours in	-	-	38 cases.
" from 12 to 24 hours in	-	-	44 do.
" from 1 to 3 days in	-	-	55 do.
" from 3 days to 1 week in	-	-	26 do.
" more than a week in	-	-	23 do.

I may, in conclusion, observe, that in several cases, and these generally very severe ones, not only was there an absence of any premonitory period marked by diarrhœa, but that symptom was not even the first which marked the occurrence of the sudden seizure. In some, it was preceded by the vomiting; and in others, cramps in the extremities took precedence both of vomiting and purging.

Treatment.—The experience which I have had of the various forms of choleraic disease, since the publication of my observations in the *Glasgow Medical Journal* for last April, does not enable me to add much to what I then said on the subject of treatment, and substantially has tended to confirm the views and opinions then expressed. In the article referred to, the results of five different modes of treatment in diarrhœa, cholera, and collapse were exhibited in a tabular form. I have had a similar table constructed, exhibiting the results of these different modes of treatment in all the cases admitted into the hospital during the entire course of the epidemic, so far as they admitted of such classification, and I have added another column showing the results of the *castor oil* treatment—a subject which has been so well handled by my respected colleague, Dr. Easton, in the No. of this Journal for October last, that I shall only say that I entirely concur in the views and conclusions which he has there so lucidly expressed. The table appended gives the results of these several modes of treatment in 718 cases, viz. :—156 of diarrhœa, 324 of cholera, and 238 of collapse. There are thus 135 cases left out, as not admitting, from the varied, mixed, or exceptional nature of their treatment, of being tabulated without adopting a more complicated form. Of these, 97 were cases of diarrhœa.*

I may add the following explanatory paragraph, which was appended to the similar table in my former communication :—

"In reference to this table, the following explanations may be necessary. In the first place, in all, or mostly all cases, counter-irritation to the epigastrium and abdomen, by means generally of

* 237 cases of collapse are embraced in this table, while only 235 are enumerated in that given at the beginning of this report. It will be remembered, however, that the previous table only indicated the state of the patients at the time of admission into the hospital. A number of cases, as will be mentioned afterwards, were verging towards collapse when they were admitted, and although these were marked as cholera, yet some of them passed so rapidly into collapse, that, looking to their state when actually under treatment, the latter is the appropriate designation.

sinapisms—occasionally of turpentine and ammoniacal epithems, and in many cases by blistering—was used. It must, therefore, be understood, that the cases in the first column shared the benefit of this practice, though “salines alone” were administered as medicines. The “adjuncts” of the second column were almost exclusively opiate enemata and stimulants—wine, brandy, and ammonia; the opiate enemata being generally given in cases of cholera; and the stimulants—though cautiously—in collapse, or cases of cholera verging on that state. In choleraic diarrhœa, catechu and opium by the mouth were also occasionally used as adjuncts. The “salines” employed were the following:—1st. The combination of salts proposed by Dr. Stevens, viz., Chlorid. sod., ℥i. ; bicarb. sod., ℥ss. ; chlorat. potass., gr. vii. These quantities dissolved in water were given every half hour, every hour, or every two hours. 2nd. The saline enema of the same writer; a table-spoonful of chloride of sodium dissolved in warm water—employed only in collapse. 3rd. The bicarbonate of soda, used as afterwards described. 4th. The same followed by acidulated draughts, as afterwards explained. And, lastly (chiefly in cases of choleraic diarrhœa, with irritability of the stomach), the ordinary effervescing soda-powders.”

SYNOPTICAL TABLE, SHOWING THE RESULTS OF SIX DIFFERENT MODES OF TREATMENT:—

	1. Salines alone.	2. Salines with Adjuncts.	3. Calomel.	4. Stimu- lants.	5. Astrin- gents with Opium.	6. Castor Oil.	
Diarrhœa,	13	37	—	1	105	—	156
Cholera,	31	191	24	8	66	5	325
Collapse,	28	155	20	30	—	4	237
							718
Cured, { Diarrhœa,	13	34	—	1	98	—	146
{ Cholera,	30	156	15	3	57	1	262
{ Collapse,	1	27	5	2	—	1	36
Died, { Diarrhœa,	—	3	—	—	7	—	10
{ Cholera,	1	35	9	5	9	4	63
{ Collapse,	27	128	15	28	—	3	201
							718

In addition to the above, I ought to mention two remedies largely employed in the hospital as “adjuncts” during the later months of the epidemic. These were a suppository, containing half-a-grain of the muriate of morphia, and the albuminous mixture. The former—first, I believe, introduced into practice (though not in cholera) by Dr. Simpson of Edinburgh—is an excellent substitute for the opiate enema, and in some respects has advantages

over it. It is fully as easily given, can generally be more speedily employed, and is not nearly so liable to be ejected. In private practice, especially, it is exceedingly portable and convenient; and, during the prevalence of cholera, when delay in checking purging may prove dangerous or fatal, and so much time is often lost in procuring an instrument for giving an enema, every practitioner ought to be provided with a box of these useful articles, which he can easily carry in his pocket.*

The other adjuvant, the "albuminous mixture," was first suggested by Dr. A. Buchanan, with the view of compensating for the drain of serum in the choleraic evacuations. How far it fulfils, physiologically, the object contemplated by its very ingenious proposer, may be a matter of doubt; but it is certainly a useful diluent in many instances, and affords a ready means of conveying nourishment to the exhausted system. It was often, in the hospital, alternated with the saline mixture, two ounces of each being given every hour or two, and was sometimes borne by the stomach when soda water (the usual beverage allowed) was vomited. In other instances, however, the stomach did not bear it, or, after some time, it had to be discontinued, from having become nauseous to the patient. As employed by us, it consisted of 2 eggs, 8 oz. milk, and 24 oz. water, beat up together, and pretty strongly flavoured with salt.

Medical statistics, however, are peculiar; and especially in reference to the effects of remedies, mere numerical results considered abstractedly, and independently of the conditions under which the remedies were administered, may convey very little information, and even lead to erroneous inferences. For example, a glance at the above table might convey the notion that *salines alone* were more efficacious in the treatment of cholera, than the same remedies in conjunction with the adjuvants I have named. Thus, of 31 cases of cholera treated on the former plan, it will be perceived that only 1 died; while out of 191 treated on the latter, no fewer than 35 died. But the explanation is, that the former were mild cases, where the purging was comparatively slight, and the vomiting was the most urgent symptom.

So also with regard to cases of collapse treated by calomel; a fourth of the limited number so treated recovered;—a large proportion, either as compared with the total recoveries from collapse, or with the recoveries under other modes of treatment. But then it is to be remembered, that very many of the cases of col-

* The muriate of morphia is rubbed up with five grains of sugar (milk sugar is preferable to common sugar, as not dissolving so rapidly), and these ingredients are then mixed with simple ointment, so as to form a suppository weighing ten grains; this is to be moulded into a conical shape, and then dipped in a mixture of oil, wax, and spermaceti, which, when cold, forms a sufficiently firm envelope to the mass, melting, however, after the suppository has been introduced, so as not to impede the absorption of the salt of morphia.

lapse were hopeless from the first moment of admission,—no small number of them actually moribund, and a great proportion of them certainly in such a state of exhaustion as to render the administration of calomel at intervals of five or even fifteen minutes for hours together, out of the question. Hence a double result;—in the first place, the cases of collapse treated on this plan were in a manner *selected*; and secondly, as all the cases, even the most hopeless, were put on *some* treatment, very frequently on the saline, the ratio of recoveries in regard to that particular treatment was necessarily much reduced.

I shall briefly state some of the conditions and indications by which I was guided in the selection of remedies in the different affections treated, and mention the combinations which were found most useful under different circumstances.

Treatment of Diarrhœa.—In regard to the treatment of this affection, the distinction which I have already noticed between the two forms of diarrhœa may be borne in mind with advantage. The true choleraic form is decidedly in general the more manageable. Confinement to bed is, however, a *sine qua non* of success; if this be enforced, and a suitable regimen followed, the simplest treatment will often succeed in arresting the affection. If, on the contrary, the patient insists on going about and following his ordinary avocations, the chances are, that all the medicine he may swallow will fail in effecting a speedy cure, and he may be considered fortunate if he escapes a sudden attack of developed cholera. I still think that the most generally useful remedy in this affection is the combination of acetate of lead and opium, which I formerly alluded to. Where the relaxation of the bowels is the principal symptom, there being little irritability of the stomach, it is to be preferred. The aromatic sulphuric acid is adapted to the same class of cases; but the lead and opium will be found, I think, the more extensively applicable and useful mode of treatment. When there was much tendency to vomiting, tincture of catechu, combined with the soda mixture (ʒi. or ʒss. of the tincture with ʒij. of bicarbonate of soda every two hours), with or without laudanum according to circumstances, was found of great benefit; or effervescing soda draughts were alternated with an astringent mixture containing laudanum and catechu. As a general rule, a large sinapism was applied over the epigastrium and abdomen, and this was almost always of perceptible advantage.

In another class of cases, marked by more or less tenderness on pressure over the colon, or in the left iliac region, in many of which the purging inclined to be dysenteric in its character, calomel and opium were employed, and answered well. A blister, sometimes requiring to be repeated, generally formed part of the treatment in these cases, and occasionally the application of leeches was of great service. Most of these cases were not of the

true or simple choleraic kind, and some of them were very troublesome and tedious. In a third class of cases, intermediate in their nature between these two, Dover's powder or the compound powder of kino, combined with hydr. \bar{c} . cretâ, were extremely useful; and the same combination was often advantageously given when choleraic diarrhoea had been in great measure checked, but the tongue was left dry and white. In all forms of diarrhoea, opiate enemata, or the morphia suppositories, were extensively employed; and it is almost superfluous to add, that the utmost attention was paid to the diet, which was exclusively limited to milk, arrow-root, and rice, with soda water in small quantities for drink.

Treatment of Cholera.—The results of our treatment, as exhibited in the above table, render it needless for me to say that I am not at all shaken in the opinion I formerly expressed, as to the general superiority and advantage of the "saline" plan. At the same time, for the reasons already stated, I should not be disposed to trust to it, except in the mildest cases, to the exclusion of the use of the opiate enemata or the morphia suppositories. These, however, are to be employed only as adjuvants, and at intervals of several hours. In the generality of cases, it was not found advisable to combine opium given by the mouth with this treatment.

The usual form in which the bicarbonate of soda was given was a solution of a scruple to the ounce of water. Of this solution, two ounces were given every hour; sometimes oftener; and at longer intervals when the symptoms abated. Dr. Stevens' combination of salts was in general found to be productive of no beneficial effects which the solution of the bicarbonate did not produce, and was much more disagreeable to the patient, whose thirst, already great, it augmented.

In my former communication I recommended, as occasionally beneficial, the exhibition of the bicarbonate of soda in ʒij . doses dissolved in two ounces of water, followed in a quarter of an hour by a draught containing fifteen drops of dilute muriatic acid; and I have frequently since seen advantage from this treatment. But, at the same time, I am satisfied, from repeated examination, that in cholera the matters vomited, when no counter-acting treatment has been employed, are generally highly acid; and of course it is only when the vomited matters have not this acid character, that benefit can be expected from this modification of the saline plan, and under such circumstances I am still disposed to recommend it.

With regard to the *modus operandi* of the soda treatment, I continue to believe that its advantage is not limited to the merely sedative effect which it undoubtedly exerts on the stomach; but that much of its efficacy is due to the absorption of the alkali or the salt of it, formed in the stomach by the decomposition of the

bicarbonate. In this report, however, I wish to confine myself exclusively to the results of observation and experience, avoiding entirely all matters of speculation or theory.

When the soda treatment, combined or not with the use of opiate enemata or morphia suppositories, is successful, a complete cessation of the symptoms is not to be expected. Even the vomiting is not, in most cases, immediately checked. The first dose, and even perhaps a portion of the second or third, may be vomited, and in the interval between the first two or three doses very little fluid ought to be allowed to be taken; but in the majority of cases the tendency to vomit will be found to be sensibly diminished from hour to hour. The arrestment of the discharges from the bowels is also generally gradual; they become first less watery as they get less frequent; then become distinctly, and subsequently largely, tinged with bile. This last result, in favourable cases, usually takes place in from 16 to 30 hours after the treatment has been commenced, and is often accompanied by a temporary increase, or a recurrence of the diarrhoea, the stools becoming more frequent. We seldom, however, were alarmed on that account, if the vomiting had ceased and the strength kept up, looking upon this symptom, under these circumstances, as an example of the *vis medicatrix nature*. The gradual disappearance of the diarrhoea, and the free discharge of bilious stools which followed, appeared to act beneficially in preventing consecutive fever, from which, in its severer forms, our cases enjoyed a remarkable immunity. I can very well understand how, by drugging the patient with opium, the alvine evacuations, as well as the vomiting, might have been more rapidly arrested;—the arrestment, however, to be followed by a febrile stage not less dangerous than that through which the patient had passed.

The administration of soda, however, did occasionally fail to check the vomiting. In such cases, two or three drops of creasote were combined with each dose of the solution for a little, with much benefit; and in some instances, where the vomiting was excessive, and apparently in no degree alleviated by the saline treatment, it was laid aside, and ten grains, or sometimes a larger dose of calomel given. This had, in several cases, the desired effect; and the soda treatment was either resumed, or calomel continued in smaller doses. Counter-irritation by means of a blister, was also called to our assistance in these cases of excessive and obstinate irritability of the stomach. Lastly, among these means for checking vomiting, when the thirst was tormenting and fluids of all kinds were immediately rejected by the stomach, I may mention the administration of ice, introduced into the mouth in small pieces at a time, or small quantities of iced milk, water, or soda water, an adjuvant to the treatment which proved of great value.

Cramps.—The aconite and chloroform liniment suggested by

Dr. Easton (*Tinct. aconit. [Fleming's] ʒij., Chloroform ℥ss., Tinct. sapon. et opii ʒx.*) has fully sustained the high character I gave it in the former number of this Journal; and I can confidently recommend it as a remedy that will scarcely ever fail in alleviating the most painful symptom of the disease.

Consecutive Fever.—This affection, in its worst form, was, as I have already remarked, more rarely observed after cholera than the experience of others would have led us to expect. A number of bad examples of it, however, occurred; and, as a general rule, more or less febrile reaction was manifested after the purging and vomiting had been arrested; and, to a certain extent, the same result followed the severer cases of choleraic diarrhœa. In the minor degrees of secondary fever, no treatment answered so well as the frequent exhibition of small doses of pulv. Jacob. ver., with hydr. c. cretâ. If there was headache, or much injection of the conjunctivæ, the head was shaved, and cold applied. If the head symptoms were more threatening, leeches were employed. If there was tenderness over the epigastrium or abdomen, and the tongue very red and raw, the leeches were frequently advantageously applied over the seat of tenderness rather than to the head. The tendency to effusion within the head was combated by blisters and calomel.

Suppression of Urine.—This symptom, although generally mentioned as characteristic of collapse, is occasionally found in simple cholera, when the evacuations have been very rapid and profuse. In such cases, the exhibition of the acetate and nitrate of potash was of great service; or if the stomach did not bear these, or if they seemed, as was sometimes the case with the acetate, to purge, the sp. junip. comp. with creasote. When circumstances rendered a stimulant advisable, a little gin was cautiously given.

Suppression of urine, or at least a very defective action of the kidneys, is also met with in the febrile stage. The evils thence resulting are in some measure counteracted by the administration of the diaphoretics I have recommended, but we derive great benefit from restoring the action of the kidneys. The above-mentioned saline diuretics, or the sp. æth. nitros, will generally have this effect; but counter-irritation to the loins, by means of a strong ammoniacal liniment, will materially aid their operation. In several cases, much advantage was derived from dry cupping over the renal regions.

Treatment of Collapse.—In reference to this stage of the disease, the result of treatment leaves us little room for congratulation; nor did the cases themselves afford much scope for clinical observation. As I formerly observed,* “in contrasting or comparing the effects of treatment in cases admitted into hospital in a state of collapse, we must bear in mind the great diversity in the

* Glasgow Medical Journal for April, 1854.

conditions of the patients, depending on the time the collapse has existed, the distance from which the patient has been brought, and even the mode in which he has been conveyed. Under any circumstances, collapse from cholera is a fearful affection to treat; but in regard to patients actually brought into hospital in that state, their condition is so desperate as to afford little room for the operation of remedies, still less for the study of the effects, and the comparison of the advantages, of different methods of treatment."

The qualifications with which the results of the calomel plan of treatment, as exhibited in the synoptical table, are to be taken, have been already stated. This remedy was generally given in collapse either in doses of one grain every five minutes, or in five-grain doses every quarter of an hour. Salivation was sometimes induced, more frequently not. In one fatal case, 228 grains were given, in single grain doses, in 19 hours; no trace of salivation was observed. In another case, which terminated favourably, 428 grains were given in 65 hours; a scruple having been given first, then one grain every five minutes for 24 successive hours; and afterwards, three grains every half hour, except when the patient happened to be asleep. And in this case, also, there was no salivation, not even mercurial foetor of the breath. It is obvious that this mode of treatment requires most assiduous attendance and scrupulous nursing, and that, in many cases of collapse, the patient's state, from his restlessness, his exhaustion, or the struggling with his apathy which would be required to enforce it, would render it impracticable.

In short, I am free to confess that a plan of treatment which should afford even a very moderate prospect of success in collapse, is still a desideratum in medicine; and if the appellation of cholera is restricted to cases in that stage, the disease is still unshorn of any of its terrors; its nature is as unknown, and its prognosis is as gloomy, as when it first emerged from the jungles of India to run its career of desolation. But believing as I do that collapse is to be looked upon merely as the last stage of the malady, in which, as is the case in the last stage of many other diseases, all the resources of our art are, in the majority of cases, set at defiance, I gladly turn to the evidence we possess of the

Facility with which cholera in its earlier stages may be arrested.—The experience of the large number of cases embraced in this report establishes as a general rule, to which there are very few exceptions, that choleraic diarrhoea, under proper treatment, will not, even in the atmosphere of a cholera hospital, lapse into cholera; and that even fully-developed cholera, under the same conditions, will very seldom pass into the collapse stage. I have already stated, that of all the forms of diarrhoea, the true choleraic form is that which is most easily and speedily cured. Of 256 cases admitted under diarrhoea we lost only 34 patients, and in

very few of these was the diarrhoea choleraic. *Of the 34 fatal cases only six passed into cholera or collapse.* Two of these were young children, who might be said to have passed at once from diarrhoea into collapse, the intermediate stage of cholera having scarcely manifested itself; and one of these children had, for a considerable time previous to admission, been labouring under exhausting diarrhoea, which, in all probability, had not been choleraic in its origin. Two other patients, adults and in pretty good health, were fairly convalescent from choleraic diarrhoea, when they were attacked by cholera of the worst type, which, in a few hours, passed into collapse. One of these—a nurse—had, in spite of instructions to the contrary, imprudently got out of bed, and gone about the hospital on the day on which the fatal attack occurred. The remaining two were both in infirm health, and had been previously inmates of the Poor-house. But with these exceptions, all the others succumbed to ordinary diarrhoea, and its usual constitutional results, or to dysentery in which it terminated, and the majority of them were persons of debilitated constitutions, in many of whom organic disease, of one kind or another, existed.

Turning to the records of our cases of simple cholera, we have also ample evidence of the power of treatment in arresting the onward progress of the disease. With very few exceptions, those cases which did pass into collapse proved ultimately fatal; and it is therefore sufficient to give an analysis of the fatal cases. Of the 73 such cases, representing, it will be recollected, 362 admissions, there passed into collapse, 34; died in the consecutive fever, without passing into the collapsed stage, 26; and were cut off by incidental or complicating affections, 13. Of these 34 cases, however, 15 were verging to collapse on admission, and some of them, indeed, might have been fairly ranked as collapse; so that, out of 362 patients, who were admitted in a condition short of collapse, only 29 of those who died actually passed into that stage. One of these was fairly convalescent from a very mild attack of cholera, when she was visited by her husband, who imprudently gave her some oranges, two of which she eat unobserved, and this indiscretion was almost immediately followed by a fresh and severe attack of cholera, which rapidly terminated in fatal collapse. Four others were treated on Dr. Johnston's plan, by castor oil, and all became collapsed, and died; only one case of cholera treated in this way having recovered.

Of the 13 patients, whose cases were complicated by other diseases pre-existing, or incidentally supervening, there died of—

Dysentery,.....	4	Apoplexy,.....	1
Pneumonia,.....	2	Renal disease,.....	1
Cynanche,.....	1	Delirium tremens,.....	1
Peritonitis,.....	1		

Another, who was in an advanced stage of phthisis, succumbed

under a mild attack of cholera; and another, who had long been in a very infirm state of health, recovered to a certain extent from cholera, but never got over its effects. In two, at least, of the cases of dysentery, that affection had clearly preceded the attack of cholera, and the same remark applies to the case of renal disease, the patient for some time having been affected with general anasarca. The apoplectic seizure seemed to have been induced by the violent vomiting; and the patient who died of delirium tremens had been drinking to excess previous to the attack of cholera, which had yielded to treatment before the affection to which his death is attributable suddenly supervened.

In bringing this report to a close, I venture to express a conviction that the facts and results I have stated afford reasonable and very considerable grounds for encouragement and thankfulness; and that, in particular, they sufficiently refute the statement so frequently repeated, that the medical profession has made no practical progress towards an improved method of treatment in cholera, since it first presented itself as a new and appalling visitant in this country. Unquestionably we have still much to learn, both as to its pathology and its treatment; but I think these facts and results warrant me in saying, that the patient and observant physician, who permits himself neither to be hurried away by fanciful theories, nor to be betrayed into reckless experimenting on his patients, will find, that when he is brought face to face with this formidable antagonist, the resources of medicine are by no means so impotent, and himself by no means so helpless, as is often supposed. Where and when a distinct stage of choleraic diarrhoea exists, he will find that he has to deal with a most manageable affection, which, in the immense majority of cases, can only be hurried forward to a dangerous issue by his own neglect, or the carelessness and indifference of his patient; and even when he has to encounter fully-developed cholera, if collapse has not occurred, he will find that, by following the treatment, the principles of which I have endeavoured to sketch, the results will be more favourable than in many a disease which is not generally reckoned an *opprobrium* to his art.

VII. *Notes of Clinical Lectures on Medical Cases.* By JOSEPH BELL, M.D., Physician to the Glasgow Royal Infirmary.

GENTLEMEN,—I beg to direct attention to the case of cyanosis connected with dilatation of right ventricle, chronic bronchitis, and emphysema.

J. C., aged 23, admitted January 30th.—He stated that he had been troubled during the last four or five years with cough and expectoration. These symptoms have become much aggravated

of late. Face of a blue colour; hands, especially about nails, of the same hue; points of fingers rounded, and nails incurved. Toes in a similar condition. The whole cutaneous surface of a dusky colour, which has existed for at least four years, and becomes aggravated after exertion or the use of stimulants.

On examination of chest, percussion elicited no abnormal dullness, except to a trifling degree at base of both lungs, where a submucous rale was heard; bronchitic rales audible over whole chest; and at several parts anteriorly prolonged expiratory murmur and crackling of emphysema heard; at these points inspiratory murmur either weak or inaudible. A pulsating tumour was detected in epigastrium; this tumour extended to within one inch of umbilicus, and pressure over it caused pain. The stethoscope detected a loud systolic bellows murmur, not only over the tumour, but also over cardiac region, gradually declining in intensity as the instrument was carried from the epigastrium. The murmur was also heard along the whole of sternum. On applying hand to tumour, a thrilling sensation was felt. Pulse 120; tongue furred; appetite bad.

The treatment under which this patient was placed had reference to the congested condition of the pulmonary organs, and at the same time was intended to support his strength. No improvement, however, took place. He gradually became feebler; his breathing more oppressed; oedema of both upper and lower extremities set in; the colour of these parts, as well as of face, became darker, assuming an indigo tinge. He expired on 2d March.

Autopsy.—Face, neck, and extremities of a dark-blue colour. On opening chest, heart was found lying more to the right side, and lower down than natural. It was much increased in size, both ventricles being dilated, but especially the right, the walls of which were attenuated. *All the valves healthy.* Lungs extensively emphysematous, especially the lower part of right, a portion of which, the size of the palm of the hand, was anæmic, and consisted of three or four air cavities, each capable of containing a small marble. Mucous membrane of bronchial tubes thickened and congested. Liver congested, and cells apparently filled with oil, some portions resembling in appearance bees' wax, and of great firmness.

As only a few of your number were present at the inspection, and as I referred to this interesting case from this place in a previous lecture, when I explained to you the principles on which I had formed a diagnosis, I think it proper to bring the chief points of interest again under your notice—to point out the errors of the diagnosis, and to explain the phenomena that you perceived during life, by the pathological conditions which we found to exist after death.

I beg to remind you, that I mentioned there were three im-

portant symptoms in this case, which constituted the bases of diagnosis:—

1st. The pulsating tumour in the epigastrium.

2d. The systolic bellows murmur.

3d. The cyanosis.

1st. With regard to the pulsating tumour, I told you that it might be one of three pathological conditions—1st, a dilated right ventricle; 2d, an aneurism; 3d, a tumour seated over the abdominal aorta. I concluded that the tumour was the dilated ventricle, because aneurism seldom occupies a position between the heart and sternum, as this tumour evidently did; again, the murmur of aneurism is diastolic; lastly, I dismissed the idea of tumour, in consequence of the distinct *thrill* communicated to the fingers when placed over the swelling, giving the impression that fluid was circulating in the tumour. This could not take place in any solid tumour seated over the abdominal aorta, and deriving its pulsation from this vessel. This point of our diagnosis was found to be correct. You must bear in mind, that in dilatation of the right ventricle, especially when this is associated (as it frequently is) with an emphysematous condition of the left lung, the heart is often felt pulsating in the epigastrium, but I have seldom, if ever, met with a case in which the pulsation was so strong and so low as in the present instance.

2d. *The systolic murmur.* The conclusion to which I came as to site and cause of this murmur, you recollect was, that it arose from obstruction to the flow of blood into the pulmonary artery; that either stenosis of the semilunar valves existed, or some other impediment to the flow of blood into this vessel. You are aware that a systolic murmur, heard loudest over the right side of the heart, theoretically indicates either obstruction of the semilunar valves of the pulmonary artery, or regurgitation through the tricuspid valves. When the latter is the cause of a murmur, we have symptoms of regurgitation in the large veins of the neck, throbbing of the jugulars, &c.; but as no such phenomena existed in this case, and as the sound was heard loudest over the distended ventricle, I therefore concluded that the murmur was not caused by imperfection of the tricuspid valves, but must arise from some obstruction situated at the origin of the pulmonary artery. The diagnosis, so far as the tricuspid valves were concerned, was found correct, but perfectly erroneous as related to the condition of the pulmonary artery. This vessel and its valves being perfectly healthy, the attempt to account for the obstruction, as a matter of course, was also erroneous. I mentioned that the obstruction might arise from one of three causes—stenosis of the valves, pressure of a dilated aorta, or a small aneurism of that vessel.

3d. *Cyanosis.*—Every medical man is aware, that whatever obstructs the circulation of the blood in the lungs produces a livid or

purplish hue of the lips, cheeks, and other vascular parts of the skin, and that nothing is more common than such an occurrence in cases of chronic bronchitis, particularly when combined with vesicular emphysema. You have seen many of these cases in the wards; but in none of these instances, nor in any which I have ever witnessed, has the blue colour approached in the slightest degree to that which this case presented. The blue colour was as perfect as I have seen in instances of cyanosis of new-born infants. I therefore considered it to be highly probable, if not perfectly certain, that some abnormal communication existed between the right and left sides of the heart, or between the larger arteries, viz., the pulmonary and aorta. No such communication could be detected on a most careful examination of the heart and vessels after death. Here again the diagnosis was at fault. I deem it of importance to you to recall to your recollection the grounds on which I was led to predicate a direct, or abnormal communication between the venous and arterial vessels.

Dr. Stillé has collected sixty-two cases of cyanosis, in fifty-seven of which a communication between the venous and arterial circulation existed, and in two of the exceptions the cyanosis was only slight; so that the probability of such a communication in our case stood in the ratio of fifty-nine to three. Again, I stated that, out of the sixty-two cases collected by Stillé, in fifty-three the pulmonary artery was either "contracted, obliterated, or impervious;" and that, in the other nine cases, disease either of the valves or contraction of the right ventricle existed,—the conclusion to which Stillé has arrived being, that both disease of pulmonary artery and venous arterial communication are requisite to produce the disease. In the case under consideration, neither existed. We had only a dilated, attenuated right ventricle, a diseased condition of the mucous membrane of the bronchial tubes, and an emphysematous state of the air vesicles.

Let us examine how far these conditions are capable of affording an explanation of the murmur, and of the blue colour of the skin.

1st. *The murmur.* I pointed out to you, at the inspection, a piece of the lower lobe of right lung of a pale anæmic colour, affording an excellent specimen of an exaggerated emphysematous condition. This piece of lung consisted of several large cells, distended with air, like little bladders, firm and inelastic when pressed. From its position, this piece of lung must have been in contact with the ventricle, and may, by the resistance which it afforded, have produced the murmur; or the ventricle, during its systole, may have impinged against the end of the sternum, and in this way the murmur may have originated, in the same way as pressure of the edge of the stethoscope over the femoral artery, as it makes its exit from the pelvis, elicits a murmur. I deem it probable, that, either one or other of these causes produced the loud systolic bellows

murmur which you heard. This case then illustrates very forcibly a circumstance which I have often mentioned to you, that however easy it may be theoretically to predicate either as to the site and cause of cardiac murmurs, yet we require to be very careful and circumspect in weighing every circumstance connected with a case before we make our diagnosis.

2d. The cause of the blue colour. A dilated and attenuated right ventricle is unable to circulate the blood through the minute branches of the pulmonary artery under any circumstances, but much more unfit when we have the mucous membrane of the bronchial tubes in a state of chronic inflammation, complicated with a collapsed condition of some of the air vesicles; an emphysematous state of others, and at the same time another portion loaded with morbid secretions and exudations; obstructive conditions so powerful as not only to overcome the propulsive power of the right ventricle, even when this is in a healthy condition, but actually to induce a dilated condition of the cavity, —a very probable circumstance in this case. I do not think, however, that mere obstruction to the circulation of the blood through the vessels of the lungs, would produce the amount of cyanosis which existed in this case. We have had, and at present we still have in the wards, several cases in which there exist all the obstructive conditions mentioned, and you see how trifling the change of colour. But several portions of this man's lungs were in a highly emphysematous condition. You saw how perfectly anæmic these portions were in appearance. We know that, in such cases, the capillaries are obliterated, and therefore, in such portions of the lungs, no oxidation of the blood can take place. This is one result, but there is another—the obliteration of the capillaries must produce a dilatation of the minute arterial branches, and which must thus necessarily anastomose with the pulmonary veins; or, in other words, the effect of long-continued emphysema must be to obliterate the capillary network existing between the branches of the pulmonary artery and veins, and thus lead to a direct communication between the minute arteries and veins of the diseased portion of lung, the physiological effect of which is, that the blood from the right side of the heart reaches the left side almost, if not altogether, unaltered. No doubt, to effect such a change in the pulmonary vessels, a considerable time would be required, but in this man's case the disease had existed for at least five years.

I consider this a much more likely cause of the intense blue colour, than mere non-oxidation of the blood from pulmonary congestion. You have seen, in cases of this nature, that, by removing the congestion by cupping, blistering, and by the judicious exhibition of stimulants, so as to increase the power of the heart, the lividity of the lips and face was removed, at least for a time. But in this case no such beneficial change took place; the poor

man told you that stimulants always made him *darker in colour*, just, I presume, in the same way as stimulants act when a direct communication exists between the two sides of the heart, or between the pulmonary artery and aorta. If there be any truth in the views which I have now adduced, as to the condition of the pulmonary circulation that existed in this case, there has been a communication between the venous and arterial vessels sufficiently direct to explain the cyanosis. The view which I have now brought under your consideration is fully borne out by the experiments of Poisenille, by the excellent observations of Dr. W. T. Gairdner of Edinburgh, in his admirable papers on bronchitis and emphysema, and also by Dr. Skoda. I once more recommend you not only to read, but carefully to study, the papers of Dr. Gairdner on these important affections of the pulmonary organs. Skoda has published some excellent remarks on the influence of the contractility of the lungs, and of the movements of respiration upon the circulation of the blood. Dr. Markham of London has given a translation of Skoda's paper, in the *Edinburgh Monthly Journal* for February, 1854. I would recommend you to peruse the whole carefully. I can only quote a short extract which bears upon the present case:—

“There is no impediment to the entrance of air into the lungs which are highly emphysematous, but whose bronchial tubes are neither narrowed nor occluded; the expiration is performed by the muscles of expiration, on account of the lung having lost its contractile power, and even here, when there is no febrile action, and the patient in repose, the expiratory effort is not great. But on account of the want of contractile force, the air is driven equally out of all parts of the lungs, but more particularly from its superficial portions and its borders, and so, conversely, is the air drawn chiefly into those parts during inspiration. In the central division of the lungs there is but little renewal of the air. Respiratory movements of this kind cannot facilitate the passage of the blood through the lungs, but, on the contrary, the loss of contractility of the lungs causes the filling of the heart's cavities to be performed entirely by the *vis a tergo*. In such cases the circulation is not facilitated by the alternation of the inspiratory and expiratory movements; the cervical veins, particularly when the patient lies down, remain distended with blood, not only during expiration, but also during inspiration, and there is also a high degree of cyanosis present, even when the breathing does not appear much affected.”

In conclusion, I beg to repeat the advice which I have often given you, viz.:—In every case which comes before you, endeavour to form a diagnosis by reasoning as accurately as the circumstances will permit, on all the phenomena which the case presents; and always, when practicable, test your diagnosis by *post mortem* examinations; trace the relations between the phenomena

observed during life, and the pathological conditions detected after death. It is only by such a course that you can expect to become expert and correct in your diagnosis. Your errors thus detected, will prove of the most signal service, not only in guiding you to avoid mistakes in future, but often opening to you new fields of study, as well as important pathological relations.

SKIN DISEASES.

Within the last few weeks we have had several cases of disease of the skin admitted into the wards. We have had varieties of the *papulæ*, *vesiculæ*, *pustulæ*, *squamæ*, *scabies*, and *favus*.

In bringing these cases under consideration, I beg to divide them into two series—the syphilitic and non-syphilitic;—the former being characterised by two prominent symptoms. *1st*, A dull-brown or copper colour, surrounding the base of eruption, and marking its vestiges. This copper colour is of much use, as a means of diagnosis. You must, however, bear in mind that the intensity of the hue varies not only with the colour and conformation of the skin of the patient, but also with the state of the general health, and the vascularity of the part on which the eruption is seated. *2d*, The skin is more deeply and permanently affected than in the ordinary non-syphilitic eruptions.

Writers on skin diseases allude to several other marks of distinction; it appears to me, however, that they are not to be depended on. The two characters now mentioned, along with the history of the case in reference to the existence of primary or secondary symptoms, will generally enable you to form a correct opinion. Even the two features which I have pointed out, must not be regarded by you as infallible, for there is no infallibility in medicine. We hear far too much of infallible symptoms and infallible remedies. Probably the remarks made by De Quincey regarding anecdotes are no less applicable to medical infallibles. This writer states—"All anecdotes, I fear, are false." "I am sorry to say so," he adds; "but my duty to the reader extorts from me the disagreeable confession, . . . that all dealers in anecdotes are tainted with mendacity." My duty to you, gentlemen, forces me to say that you will not be long in practice till you find out that many of our infallibles are more fanciful than true. With regard, however, to the diagnosis of syphilitic eruptions, I think that the *colour* and *depth* of the eruption are more worthy of reliance than any of those other marks pointed out by authors.

The first case to which I will direct your attention belongs to the class *Papulæ* of Willan—"the depositive inflammation of the dermis" of Dr. Wilson. I have designated the disease *lichen syphilitica*. The patient is 25 years of age, and was admitted on 27th February. Over the greater portion of his body there was an extensive eruption of hard, minute, conical spots, elevated above the surface of the skin, and of a dark purple hue. He had

not much itching, but at one time this was troublesome. A careful examination of the eruption could detect no fluid in these spots. The patient also complained of loss of hair and feebleness. Two years ago he had a sore on the penis, and ten months since had sore throat, shortly after which the eruption made its appearance.

Diagnosis.—With regard to diagnosis, there are only three papular diseases; viz., strophulus, prurigo, and lichen. The first is a disease of infancy; the second is characterised by broad papulæ, of the same colour as the skin, and by intolerable itching, irresistibly leading to severe scratching, by which effusion of blood takes place, and its coagulation gives rise to a dark-coloured scab, which a careful examination easily detects. In lichen, as you have seen in this case, the papulæ are *acuminated and coloured*. If you bear in mind these points, you can never be at any loss in the diagnosis of the disease.

Treatment.—The reduced state of health led me to prefer the mineral acids in combination with a vegetable tonic. He was ordered to have a wine-glassful three times a-day of the following mixture:—*Muriatic acid, nitric acid, of each half a drachm; infusion of cascarella, infusion of quassia, of each twelve ounces. To have the warm bath every night, the free use of soap and the hair glove.*

You have witnessed the rapid improvement which has taken place during the six days he has been under treatment. The eruption has nearly disappeared—a few dark-coloured scales and vestiges alone remain. I have no doubt but the patient will perfectly recover without the use of mercury.

The next case belongs to the class, *Vesiculæ*, or the “effusive inflammations” of Wilson. By the term vesicle, we mean an elevation of the cuticle, containing a clear serous fluid. There are five eruptions of this kind. Two asthenic, Rupia and Pemphigus. Three sthenic, Herpes, Eczema, and Sudamina. The case which I am about to narrate is one of *Herpes*.

A. S., aged 22, was admitted on the 23d December last. His chest, abdomen, and extremities, but especially chest, were extensively covered with small patches of *globular vesicles*, seated over a copper-coloured inflamed base. At first the vesicles were transparent, but soon became opaque, then dried up, and ultimately, along with the epidermis, were cast off in the form of scales, a dull brown stain marking their site.

Seven months previous to admission, patient had a sore on penis, followed by a bubo. Then he had an attack of sore throat, which, judging from its appearance, must have been severe. This was followed by the eruption.

Diagnosis.—Eczema is the only vesicular disease with which this case could be confounded. In eczema, the *vesicles are smaller and more acuminated*.

Treatment.—He was ordered to take a tea-spoonful of the fol-

lowing mixture three times a day:—*Iodide of potassium*, two scruples; *cinnamon water*, one and a half ounce; to have a warm bath nightly, and to use the hair glove freely. I put him under the iodide of potassium, I confess with no very definite view either as to its necessity or its utility; but as patients expect medicine, and as the profession entertain most exalted notions of the efficacy of this drug in all diseases connected with syphilis, I thought it could at least do no harm; my chief reliance being placed on the soap-water and scrubbing.

On the seventh day after admission the eruption was gone. The parts of the skin on which it had been, were of a bright copper hue. To remove this, I ordered him two grains of *ipecacuanha* every morning before breakfast. I have found this remedy very useful in at least mitigating, if not removing, these stains. He was dismissed cured on the 6th January.

The next case to which I will advert is one of *Rupia prominens*, a vesicular disease, of an asthenic character.

C. S., aged 24 years, was admitted on 29th January. Over her face, and greater part of body, a number of circular conical scabs were scattered, not unlike miniature limpet shells. When removed, a copper-coloured stain was detected. Very slight ulceration existed beneath the scabs situated on the chin. The eruption commenced six weeks ago, in the form of small pimples, which emitted a discharge, that soon solidified into the form of elevated crusts. She denied ever having had syphilis.

Diagnosis.—You will not have much difficulty in the diagnosis of *rupia*. In *pemphigus*, the other asthenic vesicular disease, the vesicles are large, and contain a limpid fluid, for a considerable time before it becomes opaque; whilst in *rupia*, the vesicles are smaller, and are opaque almost from the very first. The conical scabs are peculiar to *rupia*. A careless observer might confound *rupia* (in consequence of its opaque vesicles) with *ecthyma*, which, however, as I have frequently told you, is a pustular disease from its very commencement, and also has a much more highly inflamed base than *rupia*.

Treatment.—The warm bath was the only remedy used in this very simple case of one of the most troublesome skin diseases which we have to treat. Though the existence of syphilis was denied, yet the copper tinge which remained caused considerable doubts as to the veracity of the patient. She was dismissed cured on 22d February, being three weeks under treatment.

The next case belongs to the class *Pustulæ*, or “the suppurative inflammation of the dermis” of Wilson. You are to understand by the term *pustule*, an elevation of dermis, containing *pus*, or *purulent* matter. Be kind enough to remember these two points. It will enable you to avoid an error, too frequently committed, of confounding other diseases of the skin with the true *pustulæ*.

We have two genera in this class, viz., *Impitigo* and *Ecthyma*. The case that I am about to quote is one of the genus *Impitigo*.

W. P., aged 21, was admitted on 15th January. On face, especially on brow, and near the alæ of nose, chin, and also over chest and extremities, an eruption of small pustules was diffused. The pustules were surrounded by a deep copper-coloured base, and were intermixed with yellowish-brown crusts, and depressed stains of a deep copper colour. On the face and chest the pustules were confluent. Six months ago he contracted syphilis; about six weeks afterwards had sore throat. The eruption made its appearance four months ago. He stated that he had been brought under the influence of mercury, and afterwards used acids, but without any benefit.

Diagnosis.—The diagnosis of impitigo I hold to be very easy, provided you make a careful examination. It is a pustular disease, and hence can only be confounded with ecthyma, in which the pustules are larger, and surrounded by a highly inflamed base. It is possible to mistake the pustular stage of scabies for impitigo, but in the former affection you have a vesicular stage preceding the purulent.

Treatment.—In this case, from the deep colour of the eruption, the extent to which the dermis was implicated, and the disease having resisted active treatment, I was induced to bring the patient's system under the influence of mercury. In such cases, I have found the protiodide of mercury more useful than any other preparation of the metal. The patient was ordered *half a grain of the protiodide of mercury, and one grain of extract of hyoscyamus, night and morning.* He was also ordered a hot bath, plentiful use of soap, and the free employment of the hair glove. Thinking he was not washing his face properly, I ordered him to rub it over, night and morning, with the iodide of sulphur ointment (15 gr. to the ℥j.).

Five days after admission the gums became tender; the mercury was omitted. Nine days after the commencement of treatment the eruption was gone, leaving behind it a most brilliant copper tinge. In order to remove this, he was ordered to have six leeches applied to the gums every third day, and to have every night and morning one grain of ipecacuanha, and three grains of acetous extract of colchicum. He was dismissed cured on 1st February, a fortnight after admission.

I am not prepared to say how much the mercurial preparation contributed to the cure. I am inclined to ascribe more credit to the soap and water and hair gloves. The redness was considerably removed by the leeching and ipecacuanha. I have seen marked benefit always follow the treatment, and I do not think any of you will accuse me of placing undue confidence in medicines, which are all very well in their way, but, as I have frequently

had occasion to point out to you, obtain far more credit in the cure of disease than they deserve.

Of the class Squamæ we have had two well-marked cases. This class contains three genera—Lepra, Pityriasis, and Psoriasis. The cases belong to the last genus.

Psoriasis Annulata Syphilitica.—A. A., aged 23, admitted February 27th. Over the whole body there is scattered a profuse eruption of circular patches, covered over with thin, irregular, and gray-coloured scales. The spots vary much in size, from that of a pin's head to that of a crown-piece, the largest spots being on the legs. All are perfectly circular; the more recent ones elevated in the centre, but those of older date, from which the scales have separated, are depressed below the level of the integument, and are of a deep copper colour. The patches, at their base, are surrounded by a narrow white rim of epidermis. The eruption made its appearance five months ago. He had a sore on prepuce about ten months previously.

Diagnosis.—Lepra is characterised by a depressed centre. In this case, however, the patches are elevated in the centre during the greater part of their course. The subsequent depression extends to the whole patch, and not to the centre. In this case, we have the patches tending to convexity, whilst in lepra they tend to concavity. In pityriasis, we have the scales minute, congregated together in great abundance, in patches of irregular form, and of variable size. By keeping these few points in mind, you can have no difficulty in diagnosing such a case as this. The specific name, *annulata*, is derived from the circular appearance of the patches.

Treatment.—You will not find cases of psoriasis very curable. I have had much more difficulty with this disease than with any other affection of the skin. Upon the whole, I am inclined to place more confidence on the protiodide of mercury than anything else. I therefore ordered this patient to have half-grain doses night and morning, until gums are rendered somewhat tender. The local treatment has been the hot bath and friction with the hair glove. Considerable improvement has already taken place. I have no doubt this will be much more marked when he has been brought under the influence of mercury.

Psoriasis Guttata et Confluens.—P. M'Ph., aged 26, admitted February 27th. Over the greater part of the body there is an eruption of scaly patches, seated on a red congested base; scales white and thin; patches elevated in centre. Over chest and face the spots are distinct, irregular, approaching to circular. Over extremities, especially fleshy parts of thighs, the patches have become confluent, and at these places have attained a size greater than that of palm of hand. Some of the oldest spots are denuded of scales, and have a faint red colour, are not depressed below the surface of epidermis, and are not surrounded by a white

circle of epidermis. The disease has existed for a year. His mother and two sisters have a similar affection. He had syphilis three years ago.

Diagnosis.—The remarks regarding this point made on the other case, render any further observation unnecessary. The case becomes exceedingly interesting, contrasting, as it does, with the other in many points, especially as to colour, and the extent to which the skin is involved. There is another point of difference, the circular form of the patches, and the white circle of epidermis which surrounds the base.

What do these dissimilarities imply? I think they indicate that the first case is of a syphilitic origin, and that the second case very probably has no such connection. It appears to me that you could not possibly have a better opportunity of contrasting the syphilitic with the non-syphilitic form of psoriasis than these two cases present. No doubt the second patient states he had also syphilis three years ago. It does not follow from this, however, that the eruption holds any relation to that disease; besides, it seems to be hereditary—a matter of not unfrequent occurrence. The length of time which has existed somewhat strengthens the opinion. I may inform you, that an immense labour has been bestowed in collecting statistics as to the time which elapses from the primary symptoms of syphilis until the appearance of the eruptions. I am sorry to say the results obtained by the different observers have been so contradictory, that no reliance can be placed on time, as a means of fixing the syphilitic character of the eruption. Statistics on this, as well as on everything else, can be made to prove or disprove whatever you may desire.

Having doubts as to the syphilitic nature of this case, the following only was ordered:—*One grain of ipecacuanha and two grains of acetous extract of colchicum, night and morning. Warm bath, and to use the hair glove.*

Considerable improvement has already taken place. If further progress be not made in a few days, I intend to bleed him to a moderate extent—a most useful remedy in this class of diseases. This case, besides affording a contrast to the other, also leads us naturally to the consideration of the non-syphilitic diseases of the skin.

The cases which have been admitted into the wards may be divided into two classes—the contagious and the non-contagious. Of the former we have had examples of scabies and favus. Of the latter, specimens of impetigo and eczema. Let us consider, in the first place, the contagious.

Scabies.—This affection may be considered as forming a connecting link between the vesiculæ and the pustulæ. It is vesicular at first, and afterwards pustular. The disease is induced by parasitic animalcules inhabiting the skin (the *acari scabiei*), which burrow beneath the epidermis, and excite inflammatory action in

the papillary surface of the skin, ending in the exudation of serum, which soon becomes purulent. The disease is characterised by intense itchiness—hence the specific name “itch,” in common parlance.

E. O’N., aged 41, admitted January 29th.—Over whole body there was an eruption of pustules, interspersed with a few vesicles, and also brown scabs, surrounded by an inflamed base; besides, his body exhibited evidence of severe scratching. He complained of intense itchiness, so great at night as to prevent sleep. Eruption commenced about four months ago, after sleeping with a man who had a similar disease. It appeared at first between the fingers and about wrists; which parts are at present in a most painful condition from pustules, chaps, scabs, and surrounding inflammation.

Diagnosis.—It is said scabies may be confounded with eczema, impetigo, ecthyma, and prurigo. It is not my intention to bring under your review the points of distinction adduced by authors. To do so would tend to confuse, rather than enlighten you. Let me urge you to careful examination of the case. If you find the disease at first vesicular, and gradually becoming pustular; if you find the epidermis scaly and undermined; if you detect the presence of *acari*, and see their little cuniculi; if intense itchiness be present, you may safely conclude that the case is scabies. Even you may deduce this conclusion, if the little animal cannot be detected. In old chronic cases, you will not often succeed in finding the animalcule. In the case under consideration, after two regular hunts, we failed to start one. I was sorry for this, as I wished to exhibit it to you under the microscope.

Treatment.—I presume you were disappointed that I did not order this man that most disgusting of all unguents, the sulphur ointment, or the internal use of sulphur and treacle. I have not done so for many years. Much to the man’s displeasure, he had no internal treatment. But he was ordered the free use of soap and water, and also the cold bandage to his tumified wrists, with the result of being cured on the 12th February, with the exception of a little vascularity of the skin about those situations on which the eruption had been most severe—viz., his legs and arms. He had two grains of ipecacuanha every morning before breakfast. On the 18th he was dismissed cured. I forgot to mention that the specific name “*purulenta*” is applied to such a case as this, in consequence of the size and extreme severity of the eruption.

Favus.—The last disease, I told you, had an animal origin; the one now to be considered is said, by modern dermatologists, to have a vegetable one. It is thought to depend on the presence of a minute cryptogamic plant, which attacks the hair follicles in the same way as “mould” appears on cheese, bread, or ink, and that it is propagated by the means of “spores,” and in this way is

transmitted from one head to another. The disease, therefore, as well as itch, becomes the dread and horror of every mother, guardian, and teacher. Its poor victims are placed under a ban of isolation. Remak, Schoenlein, Fuchs, Gruby, Busk, Bennett, have all carefully investigated the history, development, and propagation of these flowerless plants, and I must refer you to their researches for further information, as to enter upon the subject in this chair would be wandering away from my proper duties of clinical lecturer. We have had two cases in the wards. The first case was admitted on 17th February; he was aged 16 years, of a strumous constitution, and had the physical signs of tubercular disease of lungs. Over the scalp were scattered a great number of minute isolated points of a yellow colour, in the centre of which you observed a hair. Many of these yellow points were seated beneath the epidermis, others were risen above it, surrounding the hair like a little cup. At several parts circular patches of the scalp were quite denuded of hair, and at other points, where the crusts had been allowed to accumulate, the integument was inflamed, perhaps partly owing to scratching. The eruption had been of four years' duration.

Diagnosis.—Favus appears under two forms—*dispersus* and *confertus*. The case is a specimen of the first variety; in the other, the spots are placed in a circular manner, constituting the true ringworm of the scalp. To be enabled to form a correct diagnosis of this disease, is a matter of very great importance. I am not going to enter into an analysis of the diagnostic signs of all the diseases of the scalp, with which careless observers are liable to confound favus. But I will again direct your attention to the four characters which you may consider diagnostic of the disease:—1st. The yellow colour, not unlike that of sulphur. 2d. The yellow spot at first is placed beneath the epidermis, and is perforated by a hair. 3d. The epidermis becomes ruptured, and carried up along with the yellow crust, so as to form a cup-like disc, which surrounds the hair cylinder. 4th. Both crust and hair fall off, leaving the scalp perfectly denuded. No other disease of the scalp possesses characters at all approaching to those now narrated. The only disease with which you might be at a loss, is impitigo; but bear in mind this is a pustular disease, and you have been told that a pustule is an elevation above the epidermis containing pus; neither of which characters exist in the yellow spots of favus. I have only to add, that several names have been bestowed on this disease, and this has led to much confusion. It has been denominated *porrigo favosa*, *scutulata*, *lupinosa*, *tinea favosa*, &c. Much of this confusion has arisen from the writers confounding the disease with the pustule, from which it most essentially differs. I think it is much better to bestow on the affection the generic name Favus.

Treatment.—Authors will tell you that this is a very troublesome disease to cure, and numerous ointments and lotions have

been highly recommended. I have never had any difficulty with the disease. You are aware that the only treatment to which this boy was submitted was to have his head thoroughly washed, night and morning, with soap and water, and to have it well scrubbed with a hair glove, the head, of course, being shaved. In order to detach the crusts, he was ordered to have a piece of lint, soaked in water, kept constantly applied to the scalp, with a piece of oil-silk over it, in order to prevent evaporation. He was also ordered cod-liver oil. Well, what was the result of this simple treatment? On the 4th March he was dismissed cured. He was, therefore, only a fortnight under treatment. But you will recollect that the disease was cured nearly a week before he was dismissed.

The second case was admitted on the 2d March. He is aged 14 years. The eruption on the scalp varied in no respect from that of last patient, except that there was a greater accumulation of crusts; so much so, that the hair could not be properly shaved at some parts. The eruption had existed for years. He had undergone a great variety of treatment. The treatment was precisely similar to that adopted in the last case. On the sixth day after admission, the only diseased appearances to be detected on the scalp were a few inflamed patches of integument, and numerous small bald spots. I ordered this patient cod-liver oil. He appears to be of a strumous habit. Indeed, I have generally found the disease associated with this form of constitution.

Impitigo Capitis.—A young female, aged 21 years, was admitted on January 15th. She stated that, about three months ago, she experienced pain and itching on the scalp. This was succeeded or accompanied by an eruption. On examination, the scalp was found to be covered over with yellowish-brown scabs. Skin of scalp much congested. At the anterior part of head, the scabs were matted together with the hair, in a thick greenish-yellow crust. Over occiput the scabs were more distinct, forming irregular hard crusts, of a yellowish-brown or grey colour. Along the margins of hair on brow, behind ears, and to some extent on nape of neck, the skin was red, and covered with a thin exudation. A number of small pustules also existed. The smell from head was most offensive.

Diagnosis.—When you are consulted regarding an eruption seated on the scalp, if you find the spots do not correspond with those described under favus, you have next to ascertain if the disease is of a pustular or vesicular nature. In recent cases this is an easy matter. If the disease be pustular, then you have only to determine between impitigo and ecthyma, these genera being only contained in the order. I have already pointed out the distinction between these two. In this case we had the pustules present, so the diagnosis was easy. The specific name is determined from the position of the eruption. When the affection of

the scalp is chronic, and when pustules cannot be detected, the greenish-yellow or brownish scabs characterise impitigo from every other eruption of the scalp. Eczema, in one of its forms, might be mistaken for impitigo; but you always find some vesicles in the former, even in its most chronic condition. I feel convinced that none of you could confound impitigo with the small cup-like crusts, with the impaled hair of favus, or with the yellow, sub-epidermal spots of its early stage.

Treatment.—She was ordered to have her head enveloped in lint soaked in tepid water, and covered with oil-silk, the day after admission. The nurse, from misconception of orders, applied a linseed-meal poultice, and you saw next day the shocking mess her head presented. However, the mistake was easily rectified. A thorough washing with soap and water, night and morning, was ordered; and *one grain of ipecacuanha*, and two of the *acetous extract of colchicum*, to be taken each night. On the 29th she was dismissed cured, but the scalp was quite well nearly a week previously.

Chronic Eczema of Leg.—R. M'L., aged 21 years, was admitted on February 3d. On the outer aspect of the right leg, a little above ankle-joint, there was a red patch of tumid skin, chopped, and exuding at these parts a thin fluid, covered, at others, with light-coloured, thin scales, easily detached. Around the lower margins of patch, and along outer aspect of foot, a number of small acuminate vesicles were seen. Had a similar attack three years ago. It was cured by blistering, but returned some months ago.

Diagnosis.—In this case the diagnosis was easy, in consequence of the presence of vesicles. In no other vesicular disease have you the same appearance presented as in this case.

Treatment.—A cold-water bandage, covered with oil-silk, was the only treatment employed. On the 9th, six days after admission, the disease had almost entirely disappeared. He was dismissed at his own request, as he thought he could treat himself as well at home as in the hospital.

The next case is also one of chronic eczema. The patient, J. B., aged 30, was admitted on the 12th February. She stated that, two years ago, an eruption appeared on left leg and foot. It was cured for a few months, but reappeared about nine months ago, and has become much worse. The lower two thirds of left leg, on both aspects, and dorsum of foot, were covered with thin scaly crusts, of an exceeding faint yellow colour. These were lying loosely on the dermis, and were of considerable size. When removed, the skin was tumid, red, and shining, with numerous excoriations, which exuded a thin transparent fluid. Along dorsum of foot, a few opaque vesicles were seen.

Diagnosis.—In a case of this kind the diagnosis is sometimes difficult, in consequence of the few vesicles that can be detected.

There are, however, only two affections with which you could confound it; viz., lichen and psoriasis. But in lichen the scales are smaller, and more yellow; and when removed, you have not the red, tumified, shining skin; but, on the contrary, it is rough, as I have pointed out to you in the case of lichen. Psoriasis is to be distinguished by the character of the scales, and the form of the patches. In every case, however, you should carefully examine for the presence of primary vesicles.

Treatment.—In this somewhat severe case, besides the application of the cold bandage, with its covering of oil-silk, I ordered six leeches occasionally to be applied near the margin of the inflamed skin. She had also the colchicum and ipecacuanha pill; two grains of the former, and one of the latter. In a case of this kind you have the integument inflamed, and the long-continued congestion leads to a debilitated condition of the vessels. To remove these conditions, I do not think you will readily discover any means superior to those employed in this case.

Mr. Vincent of London, many years ago, recommended colchicum as an alterative in such cases. I have found it act better than anything else I ever tried, but I either combine it with ipecacuanha or the *pilula Plumeri*. In these cases, you will generally find the veins of the leg varicose. Now, the action of colchicum on the liver, by relieving congestion of the portal system, may also affect the veins of the extremities. This may account, in some measure, for the utility of the drug. You have seen the rapid improvement which took place in this case. A fortnight after admission, with the exception of a few small patches here and there, the disease was removed. I have recommended this patient to wear an elastic stocking, in order to give support to the vessels of the leg. I have also told her to dip the leg, once or twice daily, into a pail of cold water. This you will find very useful in giving a tone to the relaxed tissues of such legs.

When I commenced these remarks on skin diseases, I mentioned that my object was twofold. First, to make you familiar with the diagnostic characters of the respective diseases; and, secondly, to explain the principles which guided me in the mode of treatment you have seen adopted. Probably, the frequency with which I have brought the characters of these eruptions under your notice, both in the wards and in this theatre, may have been to you tiresome; but I beg to tell you that these matters are soon forgotten, unless firmly impressed on the mind. This can only be done by repetition. You cannot be too well grounded in the principles of diagnosis. I am sorry to say that much ignorance prevails on this important point. This has arisen from two causes—the few opportunities which students have of seeing skin cases, and the difficulty experienced in detecting the diseases from the written description of authors. My object in these lectures, as well as in the wards, has been to prevent any of you labouring under these difficulties. I hold

it to be a most disreputable position for a medical man to profess to the public a knowledge of disease, and yet be unable to designate it when it is presented to his observation. There may be some excuse in obscure cases of disease seated in organs placed beyond our powers of sight, but certainly none in affections of the skin.

With respect to the pathology of these diseases, as well as many other interesting points connected with their history, I must again refer you to systematic authors and lecturers on the subject, such topics being beyond the duty of the clinical teacher.

With regard to the simple and efficacious mode of treatment which you have seen used in these cases, it involves two most important therapeutical principles:—

First, *Improvement of the General Health*, by removing any abnormal condition of function that you can detect. If this derangement depend on any special cause, modify your general treatment to meet the circumstance. If the patient has a strumous habit, exhibit the appropriate constitutional remedies. If syphilis has existed, then mercury. If errors of habit and diet, then a proper regimen; and so on.

Second, *Local Treatment*.—*Water—Soap—The Bath—Towel—Hair Glove*.—By the use of these articles you carry out the second great therapeutical principle; viz., that, by promoting the functional activity of an organ, you tend to remove any diseased condition which may exist in that organ. You must not forget that the skin is a most important physiological organ, and that its diseases have relation both to function and structure; just in the same way as the affections of any other organ of the body. It is a well-known fact, that the obstinacy of skin diseases does not arise so much from the persistence of the eruption, as from its recurrence. The majority of these diseases, after running a certain course, get well; but immediately a new crop makes its appearance. And so on for weeks and months. You perceive, therefore, that our object is not only confined to the removal of the eruption, but to the prevention of a further development in other portions of the skin. It must be obvious, that the most rational and scientific mode of local treatment is to improve the function of the skin—to maintain it in a healthy condition—and that our treatment, to be successful, must be extended not only to the part of the skin on which the eruption is seated, but to the whole cutaneous surface. It is upon these principles that I have adopted the treatment which you have witnessed in the wards. Whilst it is infinitely more agreeable than the multitudinous composts of lard and chemicals, I contend it is much more successful. I can confidently appeal to your own observation in confirmation. In the majority of the cases which you have witnessed, you have seen the disease removed long before the constitutional treatment could have proved beneficial.

So that the cure must be ascribed to the local treatment. However, never overlook the general means. Attention to this is necessary, to prevent a return.

In conclusion, I am sorry to tell you, that you will not easily prevail upon the public to use this method of treatment. People have no faith in soap and water. They are too simple remedies, and will not be used with the necessary care to insure success. You will therefore be obliged to temporize. I adopt this plan. I prescribe some very simple lotion, of a nice colour and agreeable flavour. I order the patient to be put into a cold, warm, or tepid bath, according to the age of the patient and the season of the year. I cause the whole body to be well soaped, especially the part in which the eruption is seated. The soap is then to be washed off, the patient to be dried, and then well rubbed with the hair glove. After this *the lotion, made tepid by the addition of four parts of warm water*, is to be carefully applied to the diseased parts of the skin. I frequently prescribe, for this purpose, a solution of bichloride of mercury, one grain to twenty ounces of rose-water. The patient soon gets well, and ascribes the principal part of the cure to the lotion.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *Practical Observations on Mental and Nervous Disorders.* By ALFRED BEAUMONT MADDOCK, M.D., &c. Pp. 236. London: Simpkin, Marshall, & Co. 1854.

THIS work may be safely described as an ephemeral production—a specimen of light medical literature, more suitable to adorn the table of the drawing-room, than to enrich the library of the scientific practitioner. The nervous hypochondriac, more especially if a female, will find in it much pabulum to feed and increase an already over-excited nervous susceptibility. Its style sufficiently proves that it is more intended by its author for the perusal of the ignorant and unprofessional reader, than for the instruction of his medical brethren. As a proof of this, we select one passage among many others in the book, from the first chapter, in which occurs the following sentence (p. 7):—"If the unhappy sufferer be a female, on arriving at the critical age of puberty, she will probably become subject to that distressing form of malady termed Chlorosis, or, in more popular language, 'Green-sickness'—so termed from the peculiar and greenish hue which the countenance, and in a measure the whole corporeal surface, so frequently acquires."

The popularization of medical knowledge is a process liable to much abuse. That it is a desirable thing that men should be instructed in the principles of physiology, dietetics, and hygiene—in a practical knowledge of all that pertains to the physical well-

being and the preservation of their health, no sensible man will deny. But, on the other hand, the attempt to infuse into the popular mind a knowledge, always necessarily imperfect and erroneous, of pathology and therapeutics, ought strongly to be discountenanced. Discouragements of this kind are usually ascribed by the ignorant and unscrupulous, to the fears and jealousy of the medical profession, lest a sort of medical millenium should dawn upon the world, in which every man will be his own doctor. It would be amusing, if it were not deplorable, to observe the facility with which people are deluded by the statements of impudent and illiterate men, when they direct their paltry efforts against their great bugbear—the Faculty. To practise the healing art with benefit to the community and credit to himself, a man must devote all his energies, his undivided attention to his work; while the unsuccessful tradesman, the idle vagabond, *et hoc genus omne*, who, by getting hold of some medical man's prescription for a pill or a potion, vaunt their possession of the method of curing every disease, ought to be scouted as cheats and impostors—the efforts of less unscrupulous, though equally misguided pretenders to medical skill, ought to be as strongly denounced. In a civilized community, no man can combine the practice of two professions. The clergyman or the lawyer who pretends to cure the corporeal infirmities, as well as heal the spiritual diseases, and adjust the legal differences of men, will find that he has undertaken more than he can perform. Hence we maintain, that works such as this, whose aim is to indoctrinate the mind of the general reader with pathological and therapeutical knowledge, is injurious; and when we reflect that the particular class of diseases, the treatment and pathology of which our author attempts to make popular—the class of mental and nervous diseases—is one so remote and difficult of comprehension to the uninitiated, while it is fascinating to the morbid imagination of the nervous and hypochondriac,—we cannot but believe that the effects which this work is calculated to produce, are of the worst possible description. There is one unmistakable impression which this work is fitted—we would be called uncharitable if we said it is intended—to produce, and that is, that of all living men, Dr. Alfred Beaumont Maddock is the most skilful and competent man to treat that class of diseases of which he discourses. What will Dr. Munro and Sir Alex. Morrison say to the following statement? (p. 40):—“This case (which is well known to Dr. Hayman of West Malling, and to Mr. Sanders, surgeon of Tenterden) had been rejected at Bethlem Hospital as incurable.”

The following is the case referred to:—

A drunken farmer of Woodchurch, Kent, is recommended to the care of our author by the Rev. — Wells of that place. His liver got chronically diseased, as it will do with an habitual drunkard; he become maniacal, as will not unfrequently happen when

he "enters into a pledge that he would *totally and altogether* abandon the use of *every* intoxicating drink of *what kind soever*." We admire the tautological feebleness of our author in describing a man, who, as he would say, "in popular language," becomes a teetotaler. That such a man should get well "by a gradually increasing allowance of those alcoholic compounds (gin and water in the vulgar), to which he had been formerly accustomed, as well as those pharmaceutical stimuli (brandy and ditto, we suppose), which act specifically on the nervous energy, and thereby impart tone to the vascular system," is not to be wondered at. Either of the two eminent physicians of Bethlem were, most men will believe, as competent as our author to give a correct diagnosis of such a case as this. We have encountered not a few of this class of cases, but we confess with sorrow, that we have found few who have "acquired an habitual line of self-regulation in all their feelings and actions, and who have been restored to that state of mind which is the wish of every man [except drunkards] to enjoy and preserve."

Our author introduces his "Practical Observations" by three chapters "on nervous temperament and predisposition," "on the prevalence of nervous disorders," and "on the symptoms of nervous excitement and debility;" which he illustrates with thirteen "poetical" quotations, to show, we presume, that he has combined with the more severe study of psychological science, the more graceful and pleasing cultivation of the "pleasures of the imagination" in the departments of dramatic and classic literature. After quoting and clenching his statements by two quotations from that "elegant Roman poet Horace," he falls foul of the "illustrious Sydenham, father of the modern school of physic," who, writing at the close of the seventeenth century, was bold enough to compute febrile diseases to constitute two-thirds of the maladies of mankind. "But," says our author, "had his erudite and sagacious pen been employed in these our days, he would doubtless have affirmed, what we now perceive to be the fact, that nervous diseases had usurped the place of fevers and disorders of a more active type, and constituted by far the larger proportion of the cases which fall under the treatment of the physician." Where is the registrar-general? Such a piece of unblushing effrontery as this, it has seldom been our lot to encounter. Dr. Cheyne, in the middle of the eighteenth century, found a comparative paucity of nervous diseases; but our author, in the middle of the nineteenth century, finds them to overtop and outnumber every other kind of disease; and he finds that, "perhaps, if any difference exists, the rural and agricultural districts may claim some degree of exemption." A great pathological revolution must have occurred in our day, to overturn the order of diseases—why? we ask. The answer is "commercial greatness," and the "unnatural style of living." Our author must be a protectionist. The cause of this revolution

is "cotton" and "railways." A truce to sophistry and delusion; *magna est veritas et prevalebit*. Fever is a great fact. Look to the returns of the mortality in the hospitals of the army in the East—look to the statistics of our hospitals at home. Trumpet-tongued they will tell us that Sydenham is still true, and that Maddock is false. But to proceed: our author makes a fourfold division of his subjects. He treats:—

First: Of affections of the brain and nervous system, associated with morbid states of digestion and assimilation.

Second: Of affections of the brain and nervous system, connected with derangement of the circulating and respiratory organs.

Third: Of sympathies of the brain with the function of locomotion.

Fourth: Of sympathies of the brain with the reproductive and urinary organs, and the function of sense and sensibility.

In offering the above classification, our author has the candour to inform us, on the authority of Barrow's "Lectures on Logic," that we are not to expect anything like logical or scientific strictness, as his subject will not admit of it; and we are free to admit that he has not disappointed our expectations in this respect. The first division occupies more than one hundred pages, or nearly one half of his treatise. We confess that we have experienced some feeling of surprise and disappointment, that in a book professing to consist of 'Practical Observations on Mental and Nervous Disorders,' we find no mention of diseases immediately and directly arising from derangement of the nervous system itself. Surely the brain—the organ of the mind, and the fountain of all nervous energy—and its membranes, are liable to primary as well as sympathetic disease. Dr. Maddock, however, seems to think differently, and consequently ignores this class of diseases altogether. "As the medical officer," he informs us (p. 34), "for some years of an extensive lunatic establishment, I have necessarily enjoyed great opportunities in the observation and treatment of diseases of the brain, in all their numerous and protean forms; and it is one of the chief objects of this work to show, that they have not that indelible *organic* character which has been generally assigned to them, but that they are chiefly dependent upon a deficient nervous energy, and more especially connected with the digestive, assimilating, and excretive organs." Now, we too having enjoyed somewhat similar advantages to our author in the way of observation—not in a private or proprietary, but in a large public institution—have come to the somewhat different conclusion, that the greater portion of cases of nervous diseases seen in such establishments are of an organic, though we would not say indelible description; and we would hazard the statement, on good statistical grounds, that at least fifty per cent. of them are incurable. What is the proximate cause of "a deficiency of nervous energy," but organic disease of the brain itself? We have found great torpidity as

well as great activity of the digestive, assimilating, and excretive organs in the insane, but seldom, as our author asserts, as a primary or exciting cause of nervous disease, and most frequently as a result of the deficiency of nervous excitability and intellectual power, which serious organic disease of the brain is most likely to produce. Our author forms a very low estimate of the value and importance of pathological research in nervous diseases. "Observations on the disease during life," he says (p. 34), "reflect more light on its morbid anatomy, than does its morbid anatomy illustrate the nature of the disease; the living symptoms more truthfully indicate the abnormal appearances after death, than do the morbid results explain the living symptoms." Now, it appears to us, that observations of disease during life alone, can never throw any light upon its morbid anatomy, unless we have previously made ourselves thoroughly acquainted with that morbid anatomy. It is by accurate observations of the symptoms during life, together with minute examination of appearances after death, that we will discover and establish any connection between the two. We must not depreciate the one mode of observation at the expense of the other. We must go on as heretofore, noting the symptoms of diseases during life—dissecting, examining with the microscope, weighing and analysing their products after death, if we expect ever to place medical knowledge upon a solid and scientific basis. We find that our author repudiates such a thing as scientific medicine; he recognises it only as a practical art. He does not seem even to desire that it should reach the dignity of a science. "It will be seen," he says (p. 35), "that my object has been real utility, that I have advanced no ideal speculations nor fanciful theories which might furnish matter of doubtful conjecture, but that I have contented myself with a faithful narrative of diseases, and the remedial agencies employed for their eradication. Although theory is the guide of practice, yet that practice is the life of theory. Truly has it been remarked by Cicero, '*opinionum commenta delet dies naturæ judicia confirmat*'—speculative opinions may pass away, whilst inferences drawn from nature and truth remain permanently on record." So, after all, he finds that theory or science is the guide of practice. The inferences drawn from nature and truth are, we suppose, the conclusions drawn from the "Cases" detailed in his book.

The twenty-two cases which the author details in illustration of the first division of his subject, do not require any lengthened notice, as they contain nothing new, interesting, or instructive. His nomenclature is of the most loose and vague description. His first three cases are headed "Insanity," the fourth "Melancholy," the fifth "Melancholia," the sixth "Mental despondency," and so on. We have cases of "Depression of mind" and "Mental depression," "Mental excitement" and "Disturbance of the brain," "Mental despondency" and "Melancholy;" and the list is con-

cluded by three cases headed respectively, "Mental excitement," "Mental alienation," and "Mental disturbances." We would recommend to the author to adopt some classification of his cases, and to discard the use of a multiplicity of names when the things meant to be signified are the same. All his cases could be conveniently arranged under the old division of mania, melancholia, and dementia. In discoursing of mental disease generally, he may be permitted the use of the term Insanity; but in detailing to us cases of the more striking forms of mental disease, we object to its use in the more restricted sense of Mania. The most striking thing in these cases is the uniformly successful treatment of our author, the uniformity of the symptoms and the means of cure. Derangement of the liver and chylopoetic viscera in general, is the constant pathological condition; and the treatment for the most part consists in soliciting "the biliary secretion through the intestinal canal, by aperients and stomachic tonics." The result is always pleasing and satisfactory. In all cases the functions of the liver, stomach, &c., are restored to a healthy state. In one case he says:—"I had the happiness of restoring him to his family, perfect both in intellectual and bodily health." By the way, we were informed in the first page, that perfect health, like perfect beauty, or perfect wisdom, or perfect freedom, has never yet been seen associated [with what?] in the person of any *one* individual of the human race. In another case, he says:—"I have since had the happiness of seeing my patient restored to his amiable wife," &c. &c., and so on with a delightful uniformity of success, which must have been most gratifying to the physician, to his patients, and to their friends. We find in these cases that our author can diagnose and analyse the symptoms of diseases, and prescribe for them with as much success by *letter*, as by personal visitation. We will give an outline of one of these cases as a curiosity:—A lady, "strongly advised by Mrs. C—— of ——," consults him by letter, the said Mrs. C—— of —— having been "restored by epistolary correspondence," from a state of miserable, mental despondency, and bodily suffering, to perfect health. She is 43 years of age, of a "nervous temperament," and has been poorly for three years. She has pain about the shoulder-blades; a sensation of bruising and tightness about the chest; difficulty of breathing; slight expectoration; furred tongue; metallic taste in the mouth; appetite good, but cannot digest her food; is flatulent; heavy and sleepy after dinner, and, eat what quantity she may, she always feels *miserably weak*, and disabled from attending to her domestic duties; she constantly uses laxatives; she has a peculiarity of constitution, the reverse of Mrs. C.'s; she has frightful dreams; after meals she has an oppression over the forehead, and dimness of sight; she despairs of being cured; she only hopes to be *ameliorated*.

All this, with subsequent statements, is as plain as a pikestaff

to our author. All these symptoms are caused by "impeded circulation of the liver, and by a retention of inspissated gall or mucus, obstructing the due flow of the bile into the intestines." The primary object was to get quit of this mucus, and restore the healthy action of the liver. "These points were fortunately accomplished in three weeks;" how, he does not tell us, but after the adoption of tonics for a month, "I had the pleasure," he says, "of hearing from my patient as follows:—'I have continued to improve daily since I last wrote, and am in excellent spirits.'"

When I bring back to my mind the horrors I used to endure, I cannot sufficiently thank you for your kind and successful efforts to restore me; and I also feel grateful to my dear friend in having so fortunately recommended me to seek your aid."

After having such a flattering testimonial, which our author has published, doubtless that the world may no longer remain ignorant of his incomparable skill, what hypochondriac and dyspeptic lady can hesitate to consult him, if she values health and peace of mind?

In corroboration of our remarks at the beginning of this paper, we find (p. 71) the class of readers to whom our author's works are addressed:—"A lady, aged 40, married, without family, of extremely pallid and anxious countenance, and much reduced in flesh and strength, consulted me *in consequence* of having read my work on "Diseases of the Chest." We trust that he told her to have nothing more to do with such dangerous and unprofitable reading.

Twenty pages are devoted to the second division of the subject, "Affections of the brain and nervous system connected with the circulatory and respiratory organs." He gives us only three cases, one of which, *mirabile dictu*, proved fatal. It was a case of cardiac dropsy. The second is headed, "Mental depression, with derangement of the heart," which turns out to be no disease of the heart at all. It was our author's favourite "*viscus*," the liver, which, being enlarged, "obstructed the vena cava and contiguous circulation, thus producing intermittent pulse, palpitation, and the other symptoms simulating real disorder of the heart." She is cured, *more solito*. We may be permitted to ask why this case of *simulated* heart disease is introduced to illustrate this part of the subject? It is the connection of *real* disease of the heart with disease of the brain that we expect to be enlightened on. We had hoped that we had now done with the liver. The impression which our author's remarks on this part of the subject tend to produce is, that as he believes there is a great deal less of organic disease of the brain than is generally supposed, so organic diseases of the heart are greatly over-estimated.

The third case, and the only one given to illustrate the connection between disease of the respiratory organs and disease of the

brain, is entitled "Mental exhaustion, with simulated consumption." In this case he finds, as usual, that it is the liver which is affected. The usual treatment is adopted; and who can doubt the result? It is perfect recovery. Again, we ask, is not this altogether beside the subject? What is "simulated consumption?" A mockery, a delusion, and a snare. Irrelevant cases, doubtful speculation, with chemical and anatomical theories and commonplaces, constitute the substance of this chapter.

The title of the next chapter is simply ridiculous—"Sympathies of the brain with the function of locomotion:" as well speak of the sympathies of the brain with the function of ratiocination, or any other of the functions of that organ. This division of the subject is illustrated by two cases, one of "Mental depression, with loss of muscular motion," and one of "Cataplexy,"—the case of Mrs. —, "the wife of a respectable man, who then was, and still is, a money-taker at the door of the Haymarket Theatre." This must be an interesting fact to the frequenters of that place of amusement. The chapter rapidly degenerates into a discourse on "clothing" and "tight-lacing," that

"Tyrant custom,

More honoured in the breach than in th' observance;"

and so we leave it.

The last chapter treats of the "Sympathies of the brain with the reproductive and urinary organs, *and the functions of sense and sensibility.*" In the first half of this expression we perceive some sense, in the last none, except it be the author's intention to entrap some of the readers of Miss Austen's popular novel which bears that title. The same remark applies to the "Sympathies of the brain with the functions of sense and sensibility," as we have applied to the heading of the preceding chapter. We can attach some idea to the sympathy of the brain with the morbid condition of some other organ of the body; but we can find none applicable to its sympathy with its own functions. If its functions are morbid, it must be itself diseased. If there is any sympathy, it must be the sympathy of a disease with itself, which is simply absurd. It is melancholy to reflect that the cases which this chapter contains should be submitted to the general, more especially to the female reader.

Our space will not permit us to describe the manner in which our author has treated this part of the subject. We can only glance at one of his cases, which he styles "Albumenaria." We thought at first that this was an error of the press, but on careful perusal we find that this is our author's name for albuminuria, or Bright's disease of the kidney. This case, as usually happens in all such cases, terminated in coma and death. The remarks of our author, who, in an early part of this work, professed to advance no ideal speculations or fanciful theories which might furnish matter of doubtful conjecture, are very curious. He says (p. 229), "What

effect an albuminous condition of the urine has upon the functions of the encephalon, in the present state of chemical knowledge, it would be difficult to determine. In the case just narrated, as no post-mortem examination was allowed to be instituted, and during life the microscope, from its then imperfect construction, not being available, the primary cause and locality of the disease were left to conjecture; but whether the presence of albumen had or had not a specific influence upon the energies of the brain, it is tolerably certain that an excess of nutriment (to an indulgence in which the patient was too prone), combined with an inactive and sedentary life, had a tendency to throw an excess of vitalized materials into the cranial circulation; hence, as was seen, congestion, coma, *apoplexy*, and death."

After this, we fancy that our readers would not be surprised at any pathological *gaucherie* the author might advance. It seems as if it would be a work of charity to set him right in this matter, by informing him that it is the drain, and not the accumulation of vitalized materials in the shape of albumen, from the system, and that it is the action of the urea, and not that of the albumen, upon the brain, when the diseased kidneys can no longer perform their functions of separating it from the blood, which cause coma (not *apoplexy*) and death.

We opened this book, which is got up externally in the most unexceptionable style, with the view of acquiring knowledge and offering our humble meed of praise; but we have found it such—as these pages have imperfectly indicated. We know nothing of the author but what the book discloses. We bear him no malice. He may be one of the most respectable inhabitants of Mayfair; but, having put himself forth as an instructor of the public, we must judge him by his work. It is more agreeable to applaud than to condemn; but, whether pleasing or the reverse, it is the critic's duty to pronounce his judgment truthfully, conscientiously, and fearlessly.

II. *The Pathology of the Bronchio-Pulmonary Mucous Membrane.*

By C. BLACK, M.D. Part II. Edinburgh: Sutherland & Knox. 1855.

THE part of this treatise now before us commences with an account of the non-inflammatory diseases of the bronchio-pulmonary mucous membrane, describing only the pathology of pulmonary tuberculosis. In the treatment of this topic, the author insists more especially upon three well-marked and characteristic pathological conditions; namely—1. A local predisposition; 2. A stage of deposition; and, 3. A stage of germination, growth, or development of the deposit.

In treating of these three states, various interesting practical details are worked out by the aid of microscopic and chemical research, and these details are so judiciously combined with clinical observation, as to render the view of the subject one of the most interesting that has yet been given within such limits.

Under the local predisposition, the most marked features consist in a change in the condition of the circulation, characterised chiefly by a retardation in the flow of blood, which ultimately gives rise to an appreciable modification of function in the tissues and organs immediately concerned. Such modifications are amongst the first features of the disease which arrest the physician's attention, and become more and more obvious in the influence exercised by the respiration on the different parts of the system. Amongst the most obvious results of this influence may be mentioned—1. A reduction in the bulk of the body, to an extent commensurate with the capacity of the respiratory function. 2. A long process of indigestion. From these two conditions are deduced the causes leading to the local predisposition, and to which, from extensive observation and experience, the minds of medical men now yield an almost unqualified assent. To this account of causes may therefore be referred, dyspepsia, cold, the inhalation of air loaded with dust, or with minute particles of foreign bodies, or irritant gases. The first of these, namely, the dyspepsia, is to be regarded as the first tangible point in the link of causation; because, as the author correctly remarks, it

“Is referrible either to the original constitution and vital endowments of the digestive apparatus, to a depressing action of the nervous system on the latter, to the quantity and quality of the food, or to a more or less combination of these several circumstances. These facts appear to me to have received too little attention at the hands of Professor Bennett, who, in his recent work on ‘Pulmonary Tuberculosis,’ seems to centre the whole cause of tubercle in functional aberration of the digestive organs. By doing so, to the exclusion of the efficient causes of such aberration, he seems to lose sight of that general predisposition to tuberculosis which is traceable in very many of such cases, and which is characterised by a primitive delicacy in all the tissues of the body, as the result of hereditary transmission.”

In treating of the stage of deposit, our author at once, and as if it was a matter of very easy determination, fixes the seat of the deposit. He comes to the same conclusion as is now recognised by pathologists, who have bestowed attention to this difficult point of microscopic investigation; namely, that tubercle is deposited within the minute air-vesicles, and that it seldom takes place, to any great extent, amongst the fibres composing the cell-walls. The details of the process by which the exudation comes to fill up the air-vesicle, is peculiar to the view he takes of the parts which the mucous layer and its basement membrane plays in the pathology of this pulmonary tissue. The epithelial layer of the mucous membrane is separated completely from the underlying basement membrane, in a manner analogous to the elevation of

the cuticle by a blister. This view appears to be consistent with the fact, that epithelial cells form an almost constant component in the interior of the minute particles which compose miliary tubercles. This is a character only seen in the very earliest condition of the deposit, and ceases to be discoverable when the rounded forms of the vesicular structures are destroyed by the progressive increase of the exudation.

Another feature insisted on by Dr. Black, "is more or less thickening of the basement-membrane," where the local deposit is taking place, and the physical signs thereby produced, when a sufficient extent of surface is implicated. Combined with this thickening, there is also a sensible change in the quantity of the mucus eliminated.

We come now to a consideration of some points regarding matters of observation, in which Dr. Black differs from other observers. These points refer to the minute characters of tubercle, as seen by the high powers of the microscope. This is a topic of some practical importance, inasmuch as the detection of tubercle in the sputum is a topic insisted upon with much justice by many pathologists, and especially by Dr. Black himself. It is, therefore, the more necessary that all should be able to see in tubercle the same distinctive characters. The most accurate descriptions of tubercular matter have been given by Morton, Boyle, Lebert, Bennett, Rokitansky, Richen, Henle, and Reinhardt, each of them possessing a universal and renowned reputation as observers and sound reasoners, and yet expressing sometimes very different opinions regarding matters of fact, and especially as regards the nature of tubercle.

Most now agree with Rokitansky in considering tubercle an exudation—Lebert, Bennett, and others, recognise the existence of a diagnostic or characteristic tubercle cell, as a microscopic element in tubercular exudations, and which, according to Victor, undergoes a retrograde metamorphosis. According to Dr. Black, the traces of cell-growth are only observed as an evidence of germination, growth, or development of the tubercle, which is the third phase under which he considers the pathology of tubercle:—

"If we take a portion of grey, semi-transparent tubercle, press it between two slips of glass, and, after having added a drop of distilled water, submit it to a power of 250 or 300 diameters linear, we find it to consist of a multitude of molecules and granules, often interspersed with granular cells, usually of irregular shape, and varying in size from $\frac{1}{4000}$ th to $\frac{1}{3500}$ th of an inch in their longest diameter. With these bodies are associated others having no such granular appearance, which are perfectly round, measure from $\frac{1}{3000}$ th to $\frac{1}{4000}$ th of an inch in diameter, and which appear to be cells in an early stage of growth. To these may be added the occasional presence of epithelial patches, and a few elongated masses of coagulated fibrine. The whole is more or less held together by a semi-transparent connecting medium, which forms the undefined, unorganised portion of the exudation. On adding a drop of acetic acid, the molecular matter is either in part dissolved, or at least rendered more transparent; whilst the cell-structures also undergo the latter change, but are otherwise unaffected.

Liquor potassa dissolves the cell-structures, and, at the same time, causes the molecular and granular matter almost entirely to disappear; whilst ether and alcohol exert but a slight effect in rendering the whole permanently lighter.

"If, in like manner, we examine a portion of yellow tubercle from the pulmonary cells, precisely similar structures are observed; but the degree of cell-growth is somewhat advanced. If, again, we test, by the same method, a portion of tubercle which has assumed more or less of a creamy consistence, the same structures are still found; the only difference being, that the granular cells may approach somewhat nearer, in their appearance, to what is called a pus-cell; whilst most of the non-granular cells have reached a further development, and constitute cells more or less round or oval, with well-defined margins, and varying in size from $\frac{1}{800}$ th to $\frac{1}{180}$ th of an inch in diameter. What now is the characteristic of an inflammatory exudation on the bronchio-pulmonary membrane, as deduced from a microscopic examination of the sputa? The answer is, that, in addition to epithelial patches, and numerous well-developed mucus-corpuscles, the sputa contain granular and non-granular cells, molecules and granules, together with masses of exudation, which exhibit cells in different degrees of growth, and which are held together by the as yet unorganised portion of the exudation. With these are likewise associated elongated portions of coagulated fibrine, forming bronchial casts. Hence, there is no difference whatever between a tuberculous and a simple inflammatory exudation, so far as the variety of cell-structures is concerned. There is, however, at the present stage of the comparison, a difference between the tuberculous and non-tuberculous granular cell. But this difference refers only to the granular cell of an asthenic inflammatory exudation, which is round, whilst that of a tuberculous exudation is said to be, as a general rule, of irregular shape. In many instances, such is undoubtedly the case; but in others, of manifestly tuberculous origin, the cells are as perfectly formed, and as round as in the most asthenic inflammatory exudation; whilst in exudations of an asthenic inflammatory character, they are frequently as irregular in shape as those which are present in tubercle.

"The comparison, therefore, plainly shows that there is no *diagnostic cell* of tubercle. It were, consequently, a misnomer to designate any cell by the epithet, "tubercle-corpuscle." When, however, an exudation consists essentially of irregularly-shaped cells, mingled with numerous molecules and granules, we may safely pronounce it to be of deficient vitality; but collateral circumstances must assist in determining the question of its tuberculous or non-tuberculous origin. It may or may not be tuberculous in its nature. The microscope alone cannot determine the question; a full investigation of the case, in all its bearings, is absolutely necessary for a correct interpretation of the physical appearances of the exudation."

The appearance of a tubercle cell he considers as the last vital phase which tubercle assumes, and characterises it as a stage of germination or growth—a condition which corresponds to the "softening" of authors:—

"This phasis, instead of being denominated the 'death' of tubercle, ought, in my opinion, rather to be regarded as its greatest manifestation of life, which having been attained, is, as is the case with all other exudations obtaining no higher degree of development than that of cells, immediately followed by death, and the expulsion, if possible, of the effete product from the system."

Perhaps the most interesting feature in this little treatise is the praiseworthy attempt to bring into notice what Schoulein and Remak, Zimmerman and Lebert, have already so earnestly insisted upon; namely, to found diagnoses on the character of the sputa, urine, and the like:—

"Now, the first appreciable sign of the germination of pulmonary tubercle is more correctly indicated by the microscopic characters of the sputum than by the auscultatory phenomena of the chest, or by general symptoms. As the first evidence of the germination of tubercle in the lungs, there is discharge from the bronchio-pulmonary membrane, which is invariably present during this stage, but which, nevertheless, is not diagnostic of that occurrence, inasmuch as it has been shown to exist in many cases during the stage of deposition. When, however, the stage of germination succeeds that of deposition which has been unaccompanied by discharge from the bronchio-pulmonary membrane, the sputum first expelled is thin, frothy, generally more or less aerated, of a light drab colour, of tolerably equal consistence, and presents under the microscope epithelial patches and well-developed mucus-corpuscles floating in a very granular fluid menstruum. This kind of sputum corresponds to that of epithelial bronchitis, except in the cells and epithelial patches being generally somewhat more granular than those of the latter. In the sputum first discharged in acute pulmonary tuberculosis, the mucus-corpuscles and epithelial patches are still more granular than those of the chronic form.

"Very shortly, indeed, after the establishment of expectoration, the sputum becomes thick, heavy, irregularly consistent, of a dirty drab, yellowish-white, or yellowish-green colour, pencilled with yellow or yellowish-white lines, and sometimes streaked or mixed with blood. It is viscid, tenacious, leaves the vessel in a thick, ropy mass, is neutral or faintly alkaline to test-paper, and is generally expelled in quantity from three to four, but sometimes as many as eight ounces in twenty-four hours. Microscopically examined, it exhibits numerous highly developed, and, generally, very granular mucus-corpuscles, varying in size from $\frac{1}{2000}$ th to $\frac{1}{1000}$ th of an inch in diameter. There are also present patches of epithelium, basement patches, exudation masses, and isolated exudation-cells, from $\frac{1}{7000}$ th to $\frac{1}{3500}$ th of an inch in diameter, plastic and pus-cells in variable numbers, together with bronchial casts and dark pigmentary matter. This appearance of the sputum shows that ulceration has already commenced in the bronchio-pulmonary membrane—a fact, of which the stethoscopic signs can as yet give no satisfactory indication. By-and-by small whitish, yellowish-white, semi-solid, cheesy-looking particles, are superadded in variable numbers to the sputum. These have long been regarded as softened tuberculous matter, but microscopic observation demonstrates that they are sometimes minute portions of pulmonary tissue, studded with tuberculous exudation. It is true that these masses consist essentially of tubercle, but not unfrequently they imbed some one or other of the normal tissues of the lung, which, by the pressure of the tuberculous exudation, has lost its vitality, and is thus cast off during the growth of the exudation into cells. The most frequent appearance of one of these minute masses represents more or less of cell-development, mingled with much granular matter, with here and there a patch of imperfectly developed epithelium. With these are sometimes associated irregular nodules of pigmentary matter, isolated portions of broken fibrous tissue of the pulmonary cells, and, now and then, several whole pulmonary vesicles, some of which are entirely, and others but partly, filled with tuberculous matter. Between the cells thus observed, a light greyish coloured band pursues a definite course, and in this band the natural fibrous tissue of the lungs is more or less distinctly seen. On adding liquor potassæ, the albuminous portion of the contents of the cells is dissolved, and the fibrous tissue rendered more distinct. To the presence of these fibres in the sputum, M. Lebert attaches considerable importance in a diagnostic point of view; and it is certain that, in this respect, his observations are of the greatest value. I have, however, more frequently observed these fibres in the sputa during the actual formation of caverns, than when such excavations have existed for some time. Their presence, nevertheless, in the sputa, at any period, indicates certain destruction of pulmonary tissue; but their absence, on the contrary, by no means shows that such destruction has not taken place. The presence of basement patches is of much more frequent occurrence, and they, at the same time, indicate an earlier stage of ulceration. Hence, consi-

derable diagnostic and practical value attaches to the microscopic examination of the sputum during the germination and growth of pulmonary tubercle."

From his tables, at page 120, we find that the sputum given off during the commencing germination of pulmonary tubercle, exceeds, in organic matter and the salts of lime, that of all the other pulmonary diseases which he has examined—namely, the inflammatory; and as regards the presence of alkaline salts, it affords a less quantity than the sputum of the early stage of chronic bronchitis. Lime, in the form of prismatic crystals, is to be seen in the sputum.

The remarks and experiments made on the urine are equally interesting, and he sums up with the following conclusions, which deserve special quotation:—

"1. That in the stage of commencing germination of pulmonary tubercle, the amount of urea excreted by the kidneys is, for equal quantities of urine, diminished by more than one-half, as compared with that thrown off during health. According, however, to Dr. Golding Bird, the average quantity of urea excreted in twenty-four hours, during health, is 270 grains; whilst Dr. Becquerel fixes it at 255 grains. By adopting either of these averages, there is, nevertheless, on comparison, a manifest diminution in the quantity excreted during the germination of pulmonary tubercle.

"2. That, under the above-mentioned circumstances, there is a sensible increase of uric acid in the urine.

"3. That the fixed alkaline salts are considerably less than those of healthy urine.

"4. That the amount of phosphate of lime and magnesia is almost twice that of healthy urine.

"5. That there is slight diminution in the amount of extractive matters."

We cannot now enter into details regarding the process of the cure of tubercle, which is discussed in a chapter on "The stage of advanced germination," and must conclude by the expression of a hope, that ere long we shall see melanotic and malignant diseases of this important organ treated in a similarly scientific manner; and we also pronounce a most unqualified commendation of the spirit in which the paper now before us is written, and also on the reason which has induced the author to withhold, in the meantime, any remarks upon the morbid states to which we have referred. That reason is the, as yet, limited amount of observation of the phenomena of those diseases which Dr. Black has been privileged to enjoy.

III. *On the Mode of Communication of Cholera.* By JOHN SNOW, M.D. Second Edition. London: John Churchill. 1855. Pp. 162.

THE work of Dr. Snow is undoubtedly one of the most practical and interesting of the numerous publications evoked by the late epidemic of cholera. Its object is to prove that certain general

laws govern the spread and propagation of the disease, and the opinions of the author are illustrated and enforced by numerous statistical facts, collected and arranged with much care and discrimination. We can only briefly point out a few of the conclusions deduced by Dr. Snow from the evidence he has accumulated.

In the first place, he shows that there are innumerable instances which prove the communication of cholera by individual cases of the disease, and on this point, we apprehend, he carries with him the entire agreement of all who have had occasion to see much of the disease. After citing many cases, he says—"Besides the facts above mentioned, which prove that cholera is communicated from person to person, there are others which show, first, that being present in the same room with a patient, and attending on him, do not necessarily expose a person to the morbid poison; and, secondly, that it is not always requisite that a person should be very near a cholera patient in order to take the disease, as the morbid matter producing it may be transmitted to a distance." (P. 9.)

After dwelling upon the symptoms of the disease, Dr. Snow concludes that the choleraic poison must be swallowed accidentally, and that its increase must take place in the stomach and bowels. He shows also that the period of incubation is very short—generally only from 24 to 48 hours; and that want of personal cleanliness, and, as a cause of that, deficiency of light, the involuntary passage of the evacuations, the mixing of them with water used for drinking and culinary purposes, are some of the means by which the disease is communicated and propagated. All these statements are proved correct by a most valuable collection of facts, accumulated during the prevalence of epidemics of the disease, and the influence exercised by the water supply is specially marked out and commented upon.

"The great prevalence of cholera along the course of rivers has been well known for a quarter of a century; and it meets with a satisfactory explanation from the mode of communication of the disease which I am inculcating. Rivers always receive the refuse of those living on the banks, and they nearly always supply, at the same time, the drinking water of the community so situated. It has sometimes been objected to the propagation of the disease by the water of rivers, that the epidemic travels as often against the stream as with it. The reply to this is, that people travel both against the stream and with it, and thus convey the malady from village to village and, from town to town on the banks, whilst the water serves as a medium to propagate the disease amongst those living at each spot, and thus prevents it from dying out through not reaching fresh victims." (P. 124.)

Whether we be inclined to accept Dr. Snow's views or not to their full extent, it cannot be denied that experience has abundantly proved the greater virulence of cholera in cities in the vicinity of rivers, or through which rivers pass, than in those situated at a distance from any stream.

Dr. Snow is convinced that other diseases are propagated in a

similar manner, and brings forward evidence tending to support this view so far as regards the plague, yellow fever, dysentery, typhoid fever, and intermittent fever. Towards the close of his book he details the measures required for the prevention of cholera, and there is a most curious and valuable "Appendix," containing the number of deaths from cholera registered in the four weeks ending 5th August, 1854, together with the supply of water in the houses in which the fatal attacks took place.

We trust our readers will not weigh the utility of Dr. Snow's book by the brevity of this notice. Its value does not consist in imparting much novel information on the subject of cholera, but rather in this, that the author has deemed it necessary to expend much labour, and to accumulate extensive statistical and economical data, in support of his views. This species of writing, while not perhaps interesting to the profession generally, is much more to be commended and trusted to than that which, without the aid of facts, is directed to drawing general deductions. To those interested in minute inquiry in the statistics of a disease which bids fair to become ultimately permanent in this country, and more especially in the history of its progress in the metropolis, Dr. Snow's book will be found highly instructive and not a little curious. We have great pleasure in warmly recommending it to our readers.

SELECTIONS FROM MEDICAL JOURNALS.

I. DISCUSSION ON CANCER IN THE FRENCH ACADEMY OF MEDICINE: MERITS OF THE MICROSCOPE AS COMPARED WITH CLINICAL EXAMINATION.

We make no apology for transferring the following interesting debate to our pages.

During the latter part of the last and the early part of the present year, the Academy of Medicine in Paris has been occupied in a lengthened discussion on the subject of Cancer. The main question appears to have been the possibility of the cure of cancer by operation; and out of this question arose another, which indeed occupied a very prominent share in the discussion—Does the microscope furnish us with the means of determining the nature of tumours, in such a way as to afford us accurate guidance in diagnosis and prognosis? The discussion originated in a report on some cases of cancer described by M. Parnard. As, however, these were comparatively lost sight of in the attempts to enunciate general doctrines, it will scarcely be necessary to relate them here; and we will at once proceed to give an abstract of the remarks made by the different speakers.

M. Leblanc had, in conjunction with M. Trousseau, studied cancer in the year 1827, and believed he had arrived at a means of correct diagnosis. At a later period, however, finding that his diagnosis was not always justified by the result, he was led to inquire whether the microscope could afford aid. M. Follin and M. Lebert examined for him portions of tumours taken from various animals. The results of their examinations were usually in accordance with the diagnosis of M. Leblanc; but sometimes they did not find the cancer-cells in tumours

which he had considered malignant on account of their multiplicity, their general diffusion, and their liability to return. These contained fibro-plastic tissue alone, or epithelial or melanotic tissue, also alone. The value of the microscope is, in M. Leblanc's opinion, more scientific than practical; for he had found it advantageous to remove simple tumours, on account of their liability to degenerate into cancer. The microscope had, however, enabled him to determine the nature of tumours where examination by the hand and the naked eye had failed. Cancerous tumours may be formed mainly of cancer cells, of fibro-plastic tissue, of epithelial cells, and of melanotic tissue. The word *cancer* would then be generic; and the expressions *cancerous cancer* or *true cancer*, *fibro-plastic cancer*, *epithelial cancer*, and *melanotic cancer*, would denote the species. All these are malignant. M. Leblanc would rank them in the following order, in regard to malignity: 1, true cancer; 2, epithelial tumours; 3, fibro-plastic tumours. The different elements may be combined in the same tumour, the malignity of which will depend on the proportions of the elements. The microscope is of value; but ordinary examination can alone guide us in certain phases of cancer. The earlier a tumour is removed, the less likely it is to return; when it is ulcerated or softened, it returns much more quickly, and the disease is diffused much more readily, as if the cancerous matter were more easily carried into the system. M. Leblanc stated that, in all cases in which he had been able, after an interval of from one to six years, to examine animals from whom he had removed large, old, softened, and ulcerated cancers, there had been a return of the disease. When the disease has not returned, it has been in cases where the tumour was recent, small, hard, and removed entire. Hence, we ought to operate early on tumours which we suspect to be cancerous.

M. Barth spoke of the diagnosis and the curability of cancer. The question to be determined with regard to the microscope was—Is its use indispensable for the diagnosis of cancer? From an excess of enthusiasm, more value had been attributed to this instrument than was its due. M. Barth did not oppose the use of the microscope; it could not, however, be substituted for the scalpel, although a very useful aid to that instrument in the diagnosis of tumours. In examining a cancer with the naked eye, we find the following elements:—1. A network basis, firm or lax; 2. A pulpy white matter, seated in the substratum; 3. Vessels; 4. Sometimes black matter; 5. Sometimes also gelatinous matter. The different kinds of cancer are determined by the predominance of one or other of these elements. If the pulpy matter prevail, the tumour is encephaloid; if the reticular substratum be most abundant, it is scirrhus; if the vessels are very abundant, fungus hæmatodes is formed; if black matter or gelatinous matter be present, we have the melanotic and the gelatiniform varieties of cancer. In all these, the microscope shows the presence of blastema, an amorphous substance, fibres, cells, vessels, pigment, and fatty granules. Thus, the characteristic element of cancer, in the eye of the microscopist, is the cell; with the anatomist, it is the pulp. The pulpy matter is evident in a large number of cases; and when it is abundant, it is sufficient for the diagnosis of cancer. But when the pulpy matter is scanty, the diagnosis is more doubtful; but, before we say that the microscope becomes indispensable, there are other characters which may aid in determining the cancerous nature of the tumour—such as the presence of similar tumours in the neighbouring lymphatic glands. But the diagnosis is here not quite complete; and here the microscope is likely to be useful, by revealing the presence of the cancer-cell. But has the cell always the importance attributed to it? The answers to this are contradictory; but it is well understood that cells are not present during the whole course of the disease. Thus, in the commencement, the amorphous blastema may predominate, and there may still be no cells at the period of softening. The cells may change and become atrophied in the course of evolution of the tumour; they may undergo fatty deposit; they may be changed into puriform *détritus*. Here, where the microscope fails, the clinical observer can still recognise the nature of the lesion, for the pulpy matter can be seen with the naked eye. Another circumstance which detracts from the value of the microscope is, that the tumours may undergo

a rapid change; so that in two or three days no special elements are observed by the microscope, while the specific characters of cancer are readily discerned by the naked eye.

The idea of the non-curability of cancer is both mischievous and erroneous: mischievous, because it impedes the progress of science in the future, arrests art in the present time, and because it leads to the abandonment of patients to all the horrors of their position; erroneous, because it rests on an hypothesis which is not proven, and because it is in opposition to observed facts. Microscopists assert that the disease remains when the tumour is removed; the pulpy matter and cells being always the result of a pre-existing diathesis. This view is applicable to encephaloid tumours; but, in tumours which have degenerated into cancer, may not the cancerous matter be the product of a local morbid action, like the formation of pus? And if the tumour be removed, recovery is possible. It may, however, be objected, if the recovery is perfect, that the disease has not been cancer, if the microscope have not declared it to be such; or, if it be true cancer, that the patient remains cancerous, and may have a return of the disease at the end of several years. But, asked M. Barth, is not the gaining of some years of life, even of a single year, a great result? Aye, and good hygienic conditions may be expected to produce a favourable influence, as we observe in other diseases; and if these are not sufficient, may we not hope to discover as efficient a therapeutic remedy for cancer as iodine is for scrofula? Instead, then, of denying the curability of cancer, we ought to inquire what conditions are favourable or unfavourable to recovery. These conditions are dependent upon the species of cancer; and the deductions drawn from them may be thus summed up: if the tumour is of recent origin, is firm, contains little pulpy matter and few cells, is not in a state of ulceration, and is single, and if the neighbouring glands are free, and there are no symptoms of cachexia, there is a chance of recovery. If the opposite conditions prevail, the prognosis is unfavourable. Hence cancerous tumours should be operated on at an early period.

M. Robert had investigated the statistics of the curability of cancer. M. Velpeau, in his work on *Diseases of the Breast*, states that he had operated on 250 females, who had survived. Of these, he lost sight of 100 at the end of one year, increasing to 150 at the end of two years, and 200 at the end of five. Fifty patients remained; and twenty of these remained cured at intervals varying from five to twenty-five years. Monro operated on 60 patients, of whom four only appeared free from cancer at the end of two years: of these four, three subsequently had cancer of the breast, and one ulcerated cancer of the lip. According to Mayo, cancer of the breast, operated on under the most favourable circumstances—in the early stage—returns in 95 cases in every 100. Macfarlane operated on 32 cases of cancer, and collected the histories of 118 others: the disease returned in all. Boyer says that, of more than 100 persons on whom he had operated for tumours of the breast, supposed to be cancerous, there were only four or five who were radically cured. M. Broca has collected the results of 19 cases operated on by M. Blandin, in all of which the disease returned at intervals not exceeding a little above two years. M. Lebert, in his *Traité des Maladies Cancéreuses*, says that, of 34 patients operated upon, 6 died from the operation, 21 had a return of the disease at intervals varying from three months to two years, and 7 were lost sight of. The statistics of M. Velpeau, M. Robert observed, are so different from those of other surgeons, that he must have mistaken simple tumours of the breast for cancer. These remarks apply to tumours of the breast; but, in looking to tumours of other parts, we find numerous cases of error in diagnosis.

M. Velpeau replied to the objections made by M. Robert to the accuracy of his statistics, and expressed at some length his opinions on the merits of the microscope. As long ago as 1836, he had suggested to microscopists that some special character of cancer might be found. It might, he had thought, be possible to diagnose cancer by an examination of the blood: this, however, had not been found practicable. Another character had been discovered, which he did not deem sufficient for diagnosis; he therefore had subjected the clinical appear-

ances of tumours to a more careful investigation, and had succeeded in forming a diagnosis of cancerous tumours. His diagnosis had, since 1847, been confirmed in all cases by the microscope; and he stated that, since that period, in all those patients on whom he had operated for cancer, and who had not had a return of the disease, the microscope had shown the presence of cancer. It may be said that sufficient time had not elapsed; but relapses generally occur within the second year, and are exceptional after five or six years. It is therefore evident, that perfect recovery does sometimes occur in cases where the microscope has shown the existence of cancer. M. Velpeau then went on to examine the question of the relation of epithelial tumours to cancer. Tumours had been divided into two classes: homœomorphous and heteromorphous. The heteromorphous class includes encephaloid disease, schirrus, lupus exedens, &c.; the homœomorphous class comprises fibrous or fibroid tumours, as well as warts, corns, condylomata, fungosities, &c. A wart and a venereal vegetation contain the same microscopic elements; but is there the least analogy between them? M. Lebert had endeavoured to draw a distinction between epithelial tumours and cancer, on the grounds that the former, when they are reproduced, are only reproduced in or near their original situation, and not in distant parts of the body. At first, indeed, M. Lebert asserted that epithelial tumours are not reproduced; but he modified this opinion on being convinced that it was incorrect. The facts which M. Velpeau had observed had led him to conclude that epithelial tumours do grow again, both in their original situation and at a distance, in homologous and in different tissues, in the bones, and in the viscera. They may be called epithelial cancer, to distinguish them from schirrus or encephaloid; but still they are cancer. The same remarks are applicable to fibroid tumours, between the simple and the malignant forms of which no difference could be detected by the microscope. As to the diagnostic value of the cancer-cell, M. Velpeau observed that the faith of microscopists is being shaken; for it is not always found in true encephaloid cancer, and is sometimes present in non-cancerous growths: in some cases, also, tumours have been removed which have presented no cells, and have returned in a form which has exhibited cells.

M. Robert criticised the remarks made by M. Velpeau, and entered at some length into the question of the definition of cancer; a point which is necessary to be established before the curability of the disease can be determined. Bichat laid down the following law, which has remained unchanged in all the revolutions of science: When two diseases differ in their symptoms, progress, and termination, they differ also in their seat and in the nature of the lesions which accompany them; and reciprocally, when the structure of pathological products is not the same, the functional disorders which they produce, and the progress of their evolution, constitute distinct affections. Taking this law as our groundwork in the study of supposed cancerous disease, if neither clinical observation nor physiological characters afford sufficient aid, we must look to pathological anatomy. But the persevering use of the ordinary means of investigation has hitherto produced insignificant results, and has done little more than to encumber pathology with a host of unmeaning words and incorrect comparisons. What can be the pathological importance of hardness or softness, or the much-spoken-of noise produced by section of the tumour? More delicate characteristics are wanting; and where are we to look for these? Chemistry has hitherto afforded no aid. The presence of a peculiar pulp has been supposed to indicate cancer; but it cannot always be found, and is sometimes present in non-cancerous tumours. The microscope has shown the special characteristics of cancer, and has demonstrated how the cancerous elements may be variously combined, as stated by M. Barth. Again, the microscope has shown that there are certain morbid products that may be confounded with cancer, and which may even cause death, but which arise from an exaggerated development of some of the normal tissues. Finally, it has been affirmed that extended clinical observation, in connection with microscopic investigation, has shown that tumours of various characters have each their own class of constitutional symptoms, differing in origin, seat, progress, evolution, and prognosis.

M. Robert then proceeded to demonstrate that, in his opinion, cancerous, fibro-plastic, and epithelial tumours are not identical. The special anatomical characteristic of cancer is the cancer cell: and, in answer to the assertion that these cells are sometimes found in non-cancerous growths, M. Robert would say that the non-recurrence of a tumour after removal is no proof of its not being cancerous. The physiological characters of cancer are well marked. It constantly tends to a general development, manifesting itself in the neighbouring lymphatic glands in another organ, even in the viscera themselves, especially the lungs and liver. Before a cancerous tumour has ulcerated, and has deteriorated the system by suppuration or hæmorrhage, cachectic symptoms are often manifested. Where cancer is removed by the knife, its recurrence is constant; and its progress is more rapidly fatal in proportion to the multiplication of returns and of operations. In illustration, M. Robert related a case, in which cancer was operated on and returned at successive intervals of one year, seven months, five months, and three months; on the last occasion, there was no hope of benefit from operation, and the patient soon died.

Fibro-plastic tumours are always circumscribed, and do not present the irregular branching form of some cancers, especially scirrhus. From the first they are firm, though somewhat elastic and homogeneous; they contain no pulp. Under the microscope they are observed to be composed of what M. Lebert terms fibro-plastic tissue, formed of cells and fibres resembling the elements of cellular tissue in the progress of formation. The progress of these tumours is slow, and for a long time is compatible with apparently perfect health. Sometimes they may undergo softening and ulceration, become generally developed, and produce death by implicating the viscera. This, however, is a rare occurrence; and M. Robert related cases which had occurred in the practice of Dr. MacLagan, M. Chassaignac, Mr. Syme, and himself, which showed that fibro-plastic tumours may repeatedly be removed, and may return without any affection of the general health. In Mr. Syme's case, an operation was performed five times; and, at the last return of the tumour, death was caused by local ulceration and hæmorrhage. There was no trace of disease in the internal organs.

Epithelial tumours are composed of cells similar to those which form the normal epidermis or epithelium of the skin and mucous membranes. The cells are gradually deposited in and displace the subjacent tissues. As to their analogy with such structures as warts or corns, the difference in the distribution of the anatomical element makes all the distinction between them. Epithelial tumours are chiefly developed on the tegumentary surfaces. On the skin, they commence as small scurfy excrescences, warts, or simple fissures; they then form ulcers, which have long been termed canceroid. Their progress is slow, and their tendency to infect the system is small: their utmost distance which they may reach is some of the neighbouring glands. When treated by energetic measures, which rapidly destroy the indurated parts, they are often radically cured. Epithelial tumours of the mucous membrane, as of the tongue and cervix uteri, are rapid in their progress. They almost invariably return after extirpation, and terminate in death. But their tendency to general development is very small in comparison with that of cancer. If, in fact, the pelvis of women who have died from canceroid ulceration of the cervix uteri be examined, the uterus is found partly destroyed, and the bladder, peritoneum, and even the large vessels have undergone a process of disorganization. The disease is never, however, found to have reached the other viscera; at most there may be infection of some of the glands near the uterus. In epithelial ulcers of the tongue, the cervical glands almost alone became affected, and the patient dies more from hæmorrhage, and from the constant deglutition of putrid matters, than from the disease becoming constitutionally developed. Epithelial tumours occurring at the orifices of the body, where the skin is continuous with the mucous membrane, have a mixed character; as, in the cutaneous texture, they long remain local, and the results of their extirpation, though less favourable than of the cutaneous form, are on the whole considered encouraging. Epithelial tumours are sometimes, though very rarely, reproduced in the viscera.

M. Malgaigne acknowledged the great aid in diagnosis which had been afforded by the microscope, but considered that, in the case of non-malignant tumours, it had produced confusion rather than assistance.

M. Velpeau at some length reiterated his opinions on the utility of the microscope, and on the curability of cancer. He characterised cancer as a disease presenting itself under the form of a tumour, patch, ulcer, or fungous growth, proceeding, when once established, inevitably to a fatal termination. Other diseases may appear to possess this character; but when cancer is compared with other pathological products which themselves ulcerate, multiply, or return after removal, it is readily seen that, in spite of some common characters, these productions have no real analogy with cancer. Malignity consists in the circumstance, that a morbid product, having attacked an organ, becomes substituted for the tissue of that organ until the latter is destroyed; and that, having once seized on the individual, it does not cease its progress. Non-cancerous growths may accidentally have this attribute of persistence; but it is not their constant character. M. Velpeau then reiterated and defended his opinion, that epithelial and fibro-plastic growths are malignant, and brought forward some cases to show that reproduction and constitutional affection are more frequent than was alleged by M. Robert. He also related a case where a tumour of the breast, possessing the true characters of cancer, had been several times removed, and had reappeared in the same situation. At last he destroyed it, in 1852, with caustic. The patient completely, to all appearance, recovered; but how long this state would continue could not be said. In determining the curability of cancer, an accurate diagnosis is necessary. In founding the diagnosis of cancer on clinical examination, M. Velpeau had proceeded in the following manner. He first separated simple "fibrinous" tumours, of which he found 23 in 128. The rest consisted of tumours of the breast, some of which were decidedly cancerous, while the nature of others was doubtful. Of the undoubted cancers, 24 out of 66 had a special appearance, and on these M. Velpeau refused to operate, convinced that they would of necessity return even before the wound made in operation was healed. On the remaining 42 cases he operated, and obtained some recoveries. M. Velpeau considered that cancer is primarily a local disease; hence the diagnosis is most important; and it is of more consequence to operate early, as, however simple a tumour may be at first, it may become malignant. The microscope has rendered service to science, and will probably render still greater service; but it has committed, and still commits errors. M. Velpeau did not oppose the use of the microscope; but he questioned its facts when they disagreed with his own observations. In malignant tumours, there is some specific element with which we are unacquainted. Perhaps there are several kinds of cells. Such questions can only be determined by long experience and clinical observation. We must not, in accepting the doctrines of the microscopists, set aside the accumulated experience of ages. Well-observed facts must be accepted; and it is thus only that we shall promote the advancement of science.

M. Amussat said that the diagnosis of cancer by its anatomical characters is difficult, and often doubtful; and he attached great importance to the question of hereditary transmission. In cancer of the breast or testis, there is a general reluctance to operate until the nature of the disease is well marked—until, indeed, cachexia is produced; but M. Amussat would operate early in all cases where a hereditary tendency to cancer can be ascertained. Early operation is more likely to be successful; and this is especially illustrated by *noli me tangere*, and cancer of the cervix uteri.

Noli me tangere is a true cancerous or cancrroid ulcer, having at first the most simple appearance. It is slow in development; but as soon as any application, not sufficiently powerful, is made to it, it spreads rapidly until it destroys life. It was probably for this reason that the ancients gave it the name of *noli me tangere*. This disease should be energetically treated in the early stage, even when its nature is doubtful. It is more certainly curable than any other form of cancer, principally on account of its being superficial. Potassa cum calce is

the caustic generally employed by M. Amussat. He prefers it to arsenical pastes, which have been known to produce poisoning. It is most important to destroy the bottom of the cancer, and especially its edges. By energetic treatment a radical cure is almost certainly produced.

Cancer of the neck of the uterus was considered by M. Amussat as curable, so long as the disease is confined to the vaginal part of the cervix. Under the term curable cancer, he includes all cases of deep ulceration, or commencing induration of the cervix; and he observed, that hereditary tendency is the only means of diagnosing simple from malignant disease. If it is present, active treatment should be employed; and the same course should be followed in cases of doubt. By energetic treatment—even destroying, if necessary, the entire cervix by means of potassa cum calce—M. Amussat had known cures to be effected. In ascertaining the existence of cancer of the uterus, the employment of the speculum is most important: symptoms and digital examination are insufficient. Cancer of the cervix uteri produces sterility only by the mechanical obstacle which it presents; and this is shown by the fact, that conception has in some cases occurred after the removal of the disease.

Cancer of the breast, when operated on, generally returns, because it is not removed at an early period. The proof of this is afforded by the success which Récamier obtained in treating these cancers by compression: he applied his treatment early, and destroyed the germ of the disease in its commencement.

In *cancer of the testicle*, the objection to removing so important an organ presents an obstacle to early operation; hence removal is most frequently followed by a return of the disease. Hence, it is important to operate early, when the diagnosis can be founded on hereditary predisposition, and on the resistance of the disease to treatment. May not cancer of the testicle be treated successfully by compression?

The following are the principles which M. Amussat insisted should guide surgeons in the diagnosis and treatment of cancer.

1. Cancer must not be regarded as incurable; for this unfortunate idea tends to diminish the zeal of observers, and of surgeons who desire to impart progress to science.

2. In the present state of science and practice, as soon as a patient is attacked with cancer, it is necessary to obtain from him information regarding the diseases which have prevailed in his family; and if the fact of hereditary predisposition be thus ascertained, active treatment, by means of the most efficacious remedies that can be obtained, should be at once employed.

3. When an operation has been decided on, whether by the knife or by caustic, we should rather overstep than remain within the limits of the disease; that is to say, we should destroy the cancer extensively, and only stop at the perfectly healthy tissues. Very frequently the timidity of the operator has been the only cause of a return of the disease.

4. When caustics are preferred, the most powerful should be employed. Those whose action is slow and superficial should be avoided. M. Amussat does not approve of the actual cautery in treating disease of the cervix uteri: it is formidable to the patient, and may be dangerous in some cases.

5. It is important to ascertain, by minute and repeated examinations after apparent cure, that no vestige of the cancerous disease remains.

6. After recovery, depurative medicines and attention to diet should be prescribed, from motives of prudence.

M. Delafond had, during twenty-seven years, studied the pathology of cancer in animals; and for fifteen years he had employed the microscope.

Within certain restrictions, it is correct to say that carnivora are more liable than herbivora to cancer. The horse is often affected with cancer; but mares have more frequently presented inflammation of the milk-ducts. The testicle of the horse often presents encephaloid cancer; and this disease is not uncommonly found in the lungs, spleen, liver, and lymphatic glands. Cancer is very frequent in the bovine tribe; it is sometimes found in the udder of the cow. In this tribe, encephaloid cancer of the jaw is frequently met with; the bones

becoming spongy. Among pigs, cancer of the mammae is frequently found; and there is generally a multiplicity of cancerous growths. In dogs, cancer of the mammae, lips, or skin, is not unfrequent. Among birds, it is found on the comb of the cock. In asses and mules, cutaneous tumours are found, which have been described as cancerous, but which M. Delafond regards as fibro-plastic.

M. Delafond then entered on an examination of the question as to the specific nature of a cell possessing a certain form. His opinion was opposed to this view; and, to prove his point, he endeavoured to show, by means of illustrations, that accidental circumstances may cause the cancer cell to assume various shapes. If the cell be impeded in its development, it elongates; if it remains beyond a certain time, it becomes thin and flat. Sometimes cells are contained within cells. Another modifying circumstance is the property of endosmose and exosmose, which the cell enjoys in common with other tissues; and thus it may become filled with fatty or pigmentary matter. There is nothing specific in the nature of the cancer cell to distinguish it from ordinary cells, or from those of pus, or from the elements of fibro-plastic tissue.

The cancer cell, even in its early stage, may present the elongated form; this is produced by the pressure of the surrounding fibres. In schirrus, the cell is elongated, but in encephaloid it is less so, because it assimilates the fatty and fluid matters which surround, but do not compress it.

Attempts have been made to found constructive characters in the measurement of the different elements of the cell. M. Delafond finds, with M. Lebert and other microscopists, that the cell of fibro-plastic tumours is the smallest; that of encephaloid the largest; while that of schirrus is intermediate in size. The difference in size depends on the amount of pressure exercised on the cells by the surrounding tissues.

It has been stated that the various cells may be distinguished by means of chemical reagents. M. Delafond had made trials with alcohol, ether, iodine, bile, ammonia, acetic acid, and lactic acid. Alcohol and ether dissolve the fatty matters, and render the cells more diaphanous; but they act thus alike on the cells of fibro-plastic, schirrous, and encephaloid tumours. Iodine and bile produce a yellow colour in the envelopes, and partly in the nuclei, of all the above forms of cells. Ammonia dissolves the cells more or less, in proportion to its degree of concentration. Dilute acetic acid and lactic acid render the cells more clear, and partly remove the envelopes, so as to render the nuclei and nucleoli very distinct. This result takes place in the cells of all species of tumours.

In examining cancerous tumours in animals, M. Delafond had many times found cells absent in the early stage. It might be objected that such tumours were not cancerous; in reply to this, he states that cancer cells have been found in a superficial tumour, while they have been absent in one more deeply seated.

In the lung of a cow which M. Delafond examined which was full of tumours, the cancer cells were present in some parts and absent in others, and varied much in character.

From these considerations, M. Delafond concluded that the cell is not an essential element of cancer. Yet he considered the microscope as valuable, in so far as it confirms the diagnosis, by showing the presence of some form of cancer cell; but the non-existence of cells does not show a tumour to be non-cancerous.

In speaking of the treatment, M. Delafond insisted on the necessity of extending the operation to a sufficient distance. He further directed attention to the fact, that cancer cells are found in the pus of the wound, as if they were being eliminated—a circumstance which points to the propriety of not producing cicatrization too rapidly. It is not very correct to speak of the appearance of a tumour at a distance, after operation, as a return of the disease. The external tumour is not always alone: there are at the same time deposits in many of the glands. It is more correct to say that in these cases the disease is continued.

M. Bonillaud spoke in defence of the microscope. Those who employed the instrument are to be blamed for errors and uncertainties, not the instrument itself. If microscopists differ in their descriptions, it is because they have examined different objects, believing them to be the same.

M. Robert replied at considerable length, and was followed by MM. Leblanc, Delafond, and Velpeau, the last of whom made a warm defence of the superiority of the clinical method of examining tumours.—*Abridged from the Association Medical Journal, 9th March, 1855.*

II.—CASE OF DIFFUSED ABDOMINAL ANEURISM. BY WILLIAM STOKES, M.D., ONE OF THE PHYSICIANS TO THE MEATH HOSPITAL.

Michael Malone, æt. 30, was admitted on the 6th of December, 1854. His occupation is that of a corn-porter. His habits had been temperate; and up to about nine months ago his health remained unimpaired.

At that time he first perceived a sense of weakness in the back, attended by a dull pain in the lumbar region; but these sensations did not prevent him following his occupation. In about six weeks, however, he became liable to paroxysms of pain, which he referred to the abdomen. This pain he described as a burning pain, aggravated at night, and attended with flatulence and constipation. During the paroxysm of the abdominal pain he always found relief from pressure.

He continued in this state, with but little change, until a short time previous to his admission, when the symptoms of abdominal pain, flatulence, and constipation became more troublesome.

On admission, he complained principally of constipation, and of weakness of the back and lower extremities. His general appearance was not that of a person labouring under any serious visceral disease. Neither the abdomen nor the loins presented anything remarkable; and it was only observed that the large intestines were to a certain degree distended with air. He was always relieved by the use of aperients.

On the 14th of December, a new set of symptoms set in. On turning in his bed from the left to the right side, he felt a sensation as if something had given way within him; he described it as a crack or tear; this was immediately followed by a burning pain, extending from the left lumbar region towards the umbilicus, and affecting the left thigh as far as the knee. He also felt immediately, and for the first time, a peculiar throbbing at the left side of the abdomen. At the hour of visit next morning, a remarkable change was perceptible in the appearance of the patient; his countenance was sunken and pale, and he looked as a man about to die; he lay on his back with the left thigh drawn up, any attempt to extend it giving extreme suffering.

A large pulsating tumour was found occupying the region between the false ribs and crest of the ilium. The pulsation was single, but so strong and extensive that it could be perceived at a considerable distance from the bed; in fact, it occupied the whole left hypochondriac and lumbar regions. This pulsation was of a violent heaving character, and was attended with a loud hoarse but single bellows murmur, most distinct at a point about an inch to the left of the umbilicus, but sufficiently evident over every part of the tumour. In the upper portion, and more posteriorly, the hand detected a deep-seated thrill or fremitus, occupying a space about three square inches. The murmur could be heard along the spine, and also existed in the carotids. The action of the heart had become excited, but at this time its sounds were unattended by murmur. The left femoral artery continued to pulsate, and no difference could be detected between its action and that of the opposite vessel.

From this time to the period of his death no important change took place; the tumour steadily increased in size, but became much firmer, especially in its superior portion. After a few days, a second tumour appeared, a little to the left of the mesian line, and about two inches below the ensiform cartilage. It was not possible to say whether this new tumour was a process or portion of the great lumbar tumour, or whether it was a new deposit of blood. It pulsated, and the sounds were double; but this latter character seemed to result from its pressure on the diaphragm and heart.

In the course of a week from the occurrence of the rupture, the heart's action became more feeble; the sounds were more obscure and muffled, and ultimately a systolic bellows murmur was developed in the heart. The patient's sufferings were extreme, from the feeling of weight, pain, and tension in the side, and from the burning pain in the thigh; his bowels were moved with great difficulty, and for some time he passed so little urine that it was imagined that he was unable to empty his bladder.

The posterior and lateral portions of the vast tumour became cedematous, the breathing was oppressed, and after one or two days' continuance of a sero-sanguinolent expectoration, the patient died, but not with any new or sudden symptoms.

The dissection, which was performed under very disadvantageous circumstances, and at the residence of the patient, showed the existence of a vast tumour occupying the left side of the abdomen and the lumbar region. It extended from a little above Poupart's ligament to the thorax, and was bounded posteriorly by the muscular structure and in front by the peritoneum, which it had pushed before it; the kidney lay in front. There was no effusion of blood into the peritoneal sac, or between the folds of the mesentery. Not less than six pounds of coagulum and blood were contained in the tumour.

Owing to the hurry, and other circumstances of difficulty under which the dissection was performed, it was not ascertained from what point of the vessel the original aneurismal tumour had sprung. The aorta was, however, found to be healthy to the origin of the renal artery; and there is a great probability that the aneurism arose somewhere between this point and the bifurcation. A portion of what seemed to be the original sac was removed, which exhibited an opening into the large tumour of more than two inches in length.

The amount of fluid blood in the tumour, as compared with that of the coagulum, was small, and might be fairly estimated at about one-fourth of the entire contents.

In commenting on this case, Dr. Stokes said, that although it was to be considered as an imperfect case, it still went to establish some valuable points in the history of abdominal aneurisms. Of these the most important was, that the tumour formed by the diffused portion of the aneurism might present a strong pulsation. He observed, that the formation of bloody tumours, secondary to the original false aneurism of the abdominal aorta, and having their seat in the cellular connexions of the peritoneum with the muscular masses which form the lateral and posterior parietes of the abdomen, was a circumstance long known to the pathological anatomist. Such cases have been mistaken for lumbar abscess; and the existence of a pulsation in these tumours had been denied by some authors. In some cases, however, which had occurred in the Meath Hospital, and which he had published, a feeble but decided pulsation had been detected in these tumours. It was not sufficiently strong to cause a visible heaving of the whole mass, but could be ascertained by placing the flat of the hand upon the tumour. The case established two points that were new in the history of this lesion: one, that the pulsation of such tumours might be vehement and extended, and the other, that it might be accompanied by a thrill analogous to that which occurs in varicose aneurism. It was a remarkable circumstance, too, that the thrill disappeared after the lapse of a few days, while the diastolic pulsation continued. This pulsation, too, it was to be remarked, although always visible even at a distance, had not the violence which attends the throbbing of an ordinary false aneurism. It was a manifest strong and extended pulsation, but still not so vehement as that which would attend an aneurism of great size, in which a secondary rupture causing diffusion had not taken place.

The existence of an abdominal aneurism in this case was not recognised until the period of the diffusion of the tumour; yet it is clear, that had the symptoms been sufficiently considered, the nature of the disease ought, at least, to have been suspected. Dr. Stokes observed, that owing to the great pressure of the acute cases, he had not directed much attention to the investigation of the symptoms during the few days previous to the rupture of the sac. And it was

to be remarked, that the symptoms, although they were, doubtless, sufficient to lead to a suspicion of the nature of the disease, yet had not those decided characters which had, in several instances, led to the diagnosis of abdominal aneurism, quite independent of its physical phenomena. These symptoms, as diagnostic of the disease in question, were first established by the publication of Dr. Beatty's case of abdominal aneurism in the fifth volume of the Dublin Hospital Reports. And it is probable, that the fact of the original lesion of the vessel being seated very low down, was the cause, if not of their absence, at least of their modification in the present instance.

In conclusion, Dr. Stokes observed that the case, though deficient and imperfect, not only as to the non-recognition of the nature of the malady previous to the rupture of the sac; and again, the non-determination of the exact point in the vessel where the original perforation had taken place; yet it established that a diffused abdominal aneurism might have not only a very strong and visible pulsation, but that the pulsation might for a time be attended with fremitus. We may then enumerate three forms of diffused abdominal aneurism:—

1. Formation of one or more lumbar tumours gradually, and, as it were, silently, in cases where the original disease had been recognised. These tumours present a feeble diastolic pulsation, while the force of the pulsations of the original tumour becomes diminished.

2. Formation of a large tumour within the abdomen, with a localised thrill. In a case of this kind, published by Dr. Stokes, the secondary opening was between the folds of the meso-colon.

3. Formation in a sudden manner of a tumour, rapidly increasing, and seated between the muscular structures and peritoneum, attended with strong extended and visible pulsation, accompanied at a certain point with a distinct thrill.

In this case the remedial or palliative measures employed were the use of opiates in full doses, the use of the chloroform liniment, from which the patient always derived great comfort, and lastly, the passing the electro-magnetic current along the surface of the tumour. This was done by Dr. Moore on three occasions, and on the first its use was followed by such alleviation of the pain along the thigh, that the patient was enabled to extend the limb immediately afterwards.

MEDICAL INTELLIGENCE.

1. *Report of Glasgow Royal Infirmary for 1854.*—In the Medical and Surgical wards, the number of patients remaining on the 31st December, 1853, was 196. The number admitted during the past year was 2486, so that the total number treated has been 2682. Of these, 2491 have been treated to a conclusion; 2227 have been dismissed cured, relieved, or from other causes, and 264 have died. The number of this class of patients remaining on the 31st December, 1854, was 191. In the Fever wards, the number of patients remaining on the 31st December, 1853, was 107. The number admitted during the past year was 1285, so that the total number treated was 1392; of this number 1092 have been dismissed cured, 206 have died; and the number remaining on the 31st December, 1854, was 94. In the whole Institution, the number of patients remaining on the 31st December, 1853, was 303. The total number of patients admitted throughout the year was 3771; so that the total number treated was 4074, of whom 3789 have been treated to a conclusion, 3319 have been dismissed cured, relieved, or from other causes, and 470 have died. The number remaining on the 31st December, 1854, was 285.

The smallest number of patients in the Medical and Surgical wards on a single day was 165, on the 26th of August; the largest number was 239, on the 13th April. The daily average number, as calculated for each month, was least in August, being 174; and greatest in April, being 229. In the Fever wards the smallest number of patients on a single day was 36, on 26th August; the largest was 137, on 10th February. The daily average number, as calculated

for each month of the year, was least in September, being 48; and greatest in February, being 124. In the whole Institution, the smallest number of patients on a single day throughout the year was 201, on the 26th August. The greatest was 374, on the 9th February. The daily average number, as calculated for each month of the year, was least in August, when it was 225; and greatest in February, when it was 344.

The applicants for medical relief at the dispensary have amounted to 6766. This department is free to all who apply, when their circumstances do not enable them to obtain medical assistance for themselves, and many whose cases present symptoms of urgency or danger are at once admitted into the house. Hence it appears that the total number of patients who have received medical aid in the hospital during the year has been 10,840.

It has been a matter of thankfulness to the managers, that a great and decided decrease in the number of fever patients has occurred during the past year. The total number of cases has been little more than one-half of the number of last year, and about two-thirds of the number in the two preceding years. Typhus cannot be said at any time to have appeared in an epidemic form. The presence of a greater and more appalling epidemic—cholera—following after the brief interval of four years, that of 1849, has completely overshadowed the more common and less terrible disease. It will be recollected that, in last year's report, it was mentioned that the managers had made preparation, in the event of an outbreak of cholera, for the admission of a limited number of patients. It was expected, however, that the parochial authorities would make such preparations that no great pressure would be made upon the accommodation of the hospital for the reception of ordinary cases. The rapidity with which the fatal symptoms of the disease attacked its victims, precluded the possibility of many being sent to an hospital. Besides, preparations were made for a greater number of patients being promptly attended and treated in their own houses than on former occasions, and more accommodation was prepared by the parochial authorities of the city than was occupied at any period of the epidemic. A limited number of cases were received in the Infirmary. Exposed to the same epidemic influence as the rest of the city, not more than two or three cases occurred among the patients in the hospital. Application was made to the managers to receive patients from a country district, but was refused on the principle that the carriage of patients for a distance of some miles would most probably prove injurious, if not fatal. Recently, cholera having in a great measure disappeared from the city, the parochial authorities applied to the managers of the Infirmary to receive any cases that might occur, in order that they might close the cholera hospital, and apply it to other useful purposes. This proposition was at once acceded to, and the managers undertook to receive any cases that might present themselves. In so far as this may be a proof that cholera has left the city, the managers rejoice that no case has been brought to the Infirmary since the arrangement was entered into to receive such as might occur.

In so far as fever is concerned, the managers find that towards the end of August last it fell to its lowest ebb—there being only 36 patients in the house at that time. This was a gradual decrease from 137 at the beginning of the year. Since August they find that it has been gradually on the increase towards the end of the year, till it has reached the number of 94. This is in accordance with the observation, that in the absence of an epidemic, fever decreases with the mildness of the season, and increases with its severity.

In the ordinary Medical and Surgical wards, there has been a greater number of patients than there were last year. It is to be expected that this department of the hospital, which is intended to meet the ordinary wants of the labouring class of the community, would be gradually on the increase with the increase of the population. As might be expected in a community such as this, the number of accidents has been great. To the admission of this class of cases, as ought to be well known, every facility is offered. The managers are particularly desirous that no misunderstanding should exist on this subject, that the doors of the Infirmary are open at all hours of the day and night for the reception of

accidents, no written recommendation whatever being required. Under the head of accidents are included all those cases of extreme urgency, in which immediate medical or surgical aid is requisite, and which the patient cannot obtain without applying to the hospital.

At the beginning of the summer, the managers were under the necessity of providing additional accommodation for small-pox, which prevailed extensively during the summer months. In autumn this malady had almost altogether disappeared, but at the end of the year it has again so much increased, that the ordinary accommodation is now nearly full.

In the beginning of November, an application for a change of the visit and lecture hour, signed by a majority of the medical attendants, was laid before the managers. After much deliberation, it was resolved that no change should take place either in the visit or lecture hour during the present session, and the following resolutions were adopted by the managers:—

1st. That in conformity with the nearly unanimous report of a committee, which was appointed to inquire into this subject in 1849, the present hour of visit should be altered to an earlier one than the present.

2nd. That in the whole circumstances of the house, the visit hour should be 12 o'clock noon, and that this change should take place on and after 1st May next.

3rd. That to contribute to the good working of the proposed arrangement, and with a view to the better management of the medical business of the house generally, and to the greater efficiency of the clinical lectures, the managers should provide a separate room for conducting inspections.

It was resolved at the same time, that the working of the change effected by the second resolution should be reported on at the meeting of managers in August next.

The sources of income are usually divided into ordinary and extraordinary; the former consisting of those which are annual and regular, and the latter of those which are incidental and special. The most important part of the ordinary income consists of the annual subscriptions, which this year amount to the sum of £3428. 14s. 6d. The managers are happy to be able to report that this source of their income has been more productive than it was last year. It will be observed, however, that this, which forms the principal item of their income, does not amount to more than one-third of the expenditure. The amount received under the head of extraordinary income has been £1641. 5s. 10d. This consists of legacies and donations. The legacies amount to £1473. 7s. 8d., and the donations to £167. 18s. 2d. The whole income for the year amounts to £10,491. 8s. 7d.; including £54. 4s. 4d. of property and income tax returned. The expenditure has amounted to £10,236. 0s. 3d.

The average expense of each patient has been £2, which exceeds the average of last year by 1s. 3d. This is accounted for chiefly by the increase in the price of articles of consumption.

ABSTRACT OF THE WHOLE PATIENTS ADMITTED DURING 1854.

Total patients admitted during the year,	3771
Remaining from 1853,	308
	4074
Remaining 31st December, 1854,	236
Total cases treated to a termination,	3789
Number cured,	2201
Dismissed, improved, and on other grounds,	928
Died,	470
	3789

	MEDICAL WARDS.	SURGICAL WARDS.	FEVER WARDS.	TOTAL.
Average residence,	27 days,	30 days,	23 days,	26 days.
Average mortality,	{ Males, 1 in 7. Females, 1 in 84. }	{ Males, 1 in 12. Females, 1 in 12. }	{ Males, 1 in 6. Females, 1 in 6. }	{ 1 in 8. }

	MEDICAL AND SURGICAL WARDS.	FEVER WARDS.	TOTAL.
Greatest number in House,	239 on 13th April,	137 on 10th February,	374
Least number in House,	165 on 26th August,	36 on 26th August,	201
Average number in House,	203 { Males, 137 } { Females, 65 }	84 { Males, 41 } { Females, 43 }	286

2. *Glasgow Mortality Bill for 1854.*—It will be observed that the burials in Glasgow and suburbs amount to 17,364—the deaths being 16,356, and the still-born, 1,008, showing an increase over the burials of 1853 of 2,076, and of deaths of 2,044. The rate of burials of 1854 to the assumed population, which at the rate of a little under three per cent., is 396,000; being as 1 to 22·8, and the rate of deaths as 1 to 24·2. This excessive mortality was the result of the cholera epidemic and its concomitant, diarrhoea,—these two diseases alone having carried off 4,612 victims. If, therefore, we deduct this exceptional mortality from the last year's deaths, it will be found that the rate otherwise to the population is only 1 in 33·7. In order to arrive, however, at something like a proximate knowledge of the annual mortality of Glasgow, I shall take the annual deaths for the last seven years, having thereby the census year as the mean of the population of the whole period.

It appears that during the last seven years, which, however, include two visitations of cholera, the deaths in Glasgow have amounted to 86,924; the still-born, to 6,619; and the burials, to 93,543; or taking it in a more striking point of view, there have died in this city in the last seven years twice as many persons as constituted the whole population of Glasgow in 1775, and more than even the whole population of little more than fifty years ago. The average annual deaths being 12,417, the average of still-born being 945, and the average burials being 13,363. This is even a very high average figure of mortality, and, from the addition of the cholera deaths of 1848-49, and of 1853-54, makes this septennial average likewise exceptional. The census year, which may be considered a fair average twelvemonth, showed that the deaths were only as 1 to 33·5 of the then ascertained population. Both averages, however, show a very different figure of mortality from that of last year, which has been the most fatal to life in this city since the year 1847, when the Irish famine fever raged among us. Of the 16,356 deaths which have occurred during the last twelve-months, it will be found that the young have been, as usual, very great sufferers, the figures being as follow:—

Under 1 year,	...	..	...	2,257
Under 5 years,	...	...	...	4,422

6,679

or 40·83 per cent. of the whole deaths during the year, being 8·40 per cent. less than the previous twelve months.

Although it appears that during the last twelve months, the infantile deaths, when compared with the whole deaths, are much less than they have been since 1848, it must be remembered that this does not arise from any actual decrease of deaths among the young, but because there has been a most extraordinary increase in the deaths of adults—the result of the existence of Asiatic cholera.

When the average amount of infantile deaths occurring during the last seven years, which appears to be 5,535, is measured by the amount of the population under five years of age, which was ascertained by the census of 1851 to exist in Glasgow, forming the mean of those years, and which was 44,834, it will be found that the annual amount of infantile deaths in this city to the population under five years is as 1 to 8·10; the proportion of infantile deaths to the whole deaths during the same period being 44·56 per cent.

As a comparison of our infantile mortality at present with what it was last century, I may mention that in the Mortality Bill of 1775, which is now before me, I find that out of the whole deaths which occurred during that year in Glasgow, amounting to 1,280,740 died under five years of age, or 57·81 per cent., showing a difference in favour of the present period of 13·25 per cent. Carrying our comparison a little farther, I looked into the *Annuaire* of this year, and find that in Paris, in 1853, while the whole deaths were 33,262, out of a population of 1,053,262, the deaths under five years of age were 10,027, or 30·14 per cent. of the whole deaths; which shows that the infantile deaths to the whole deaths in the French capital were, in 1853, 10·69 per cent. less than in Glasgow in 1854; while infantile death is to the population of Paris as 1 in 105,

and to that of Glasgow as 1 in 59. This, certainly, shows a great difference in favour of infant health in the former, when compared with the latter city—a difference, however, which we suspect must in some degree be attributed to the number of children born and brought up in hospitals, or to the large annual number which are taken from those well-conducted institutions, and carried into the country.

Cholera.—It may be recollected by those who take an interest in the vital statistics of this city, that towards the close of 1853 Asiatic cholera had for the third time made its appearance, and that during the months of November and December, 151 persons had died of that disease. From January the number gradually increased till March, and then fell off till May, when it was hoped that the epidemic had altogether ceased; a new outbreak, however, began in June, and gradually increased in virulence till August, when the disease again declined, and ultimately exhausted itself about the first week of December.

It appears that during the epidemic of 1853-54, there were 3,892 deaths from cholera, 958 from diarrhœa, and 118 from dysentery. Each of the three visits that cholera has made to Glasgow has been characterised by some peculiarities. In 1832, its ravages extended over a space of nearly nine months, and carried off 3,005 of the inhabitants, or about 1·4 per cent. of the then population; the malady being chiefly confined to the lower and more densely-peopled portions of the town, and being almost altogether limited to the more destitute portion of the people. On its second visit in 1848-49, its term of continuance was limited to 18 weeks, but during that short period it carried off no less than 3,777 of our citizens, or about 1·06 per cent. of the then population; the malady on that occasion having attacked a better part of the city, and cut off fully a proportionate number of the higher and middling classes of the community. The disease, though less destructive to the general population, was hence more appalling than its predecessor, and cast a gloom over the habitations of the wealthy, while it pressed with comparative lightness on the crowded hovels of the poor. On this third visitation, its term of continuance has been extended to twelve months, while its victims have not been proportionally so great; the number of deaths from the beginning to the close having been 3,892, or 0·98 per cent. (or nearly 1 per cent.) of the present assumed population. At the commencement of its course, it showed itself chiefly in the northern and eastern parts of the town, but after its second outbreak in June, it was found in every quarter; while at its close, it seemed to take its victims from the very best conditioned parts of the city, and from among the best conditioned individuals of the community. Although during the three several visits of this distemper to our city, the authorities did all in their power to mitigate its appalling effects, it is doubtful if all that was done did much to arrest the disease. Notwithstanding all the exertions of the philanthropic magistracy, and of four active Parochial Boards, to meet the recent approach of this mysterious visitor—notwithstanding the opening, as soon as the disease actually appeared, of an hospital for the poor and destitute, under the direction of those who had watched and combated the malady during its former visitations—notwithstanding the adoption of whatever new remedies science or experience had suggested—it is sad to find that, while on this as on its two former visits, it has carried off its one victim out of every hundred of the population, its cause seems to remain as much a mystery, and its cure almost as much an enigma, as on its first appearance amongst us.

Small-Pox.—Although it is now more than half a century since Dr. Jenner—who for his great discovery was worthily made an honorary burgess of this city—fairly established here and elsewhere the efficacy of vaccination as a preventive of small-pox, yet, strange to say, even at this hour its benefits are much neglected by many of our citizens. From the Mortality Bill of last year, it appears that no fewer than 467 died in Glasgow and its suburbs from small-pox, being an increase over those of 1853 of 171. On consulting the tables for the last seven years, it will be found that the whole deaths have been 3,087, being an annual average of 441, and when measured in the mean known popu-

lation of 1851, shows 1 to each 816·6; while on comparing the results of the same disease in 1775, when the population of Glasgow was only 43,000, and when no fewer than 365 persons died from small-pox, the deaths being therefore, from this disease, 1 in 117·80 of the inhabitants, and 28·51 per cent. of the whole deaths, we have the most striking of all illustrations of the benefits derived from vaccination. If the community would only be more alive to the sure benefits arising from faithful cow-pock inoculation, little would be feared from this disease; but it is too obvious, that unless some stringent obligation be placed on the parents and guardians of the helpless victims of this fell disease, there is little hope that the growing evil will be much mitigated. The great bulk of this endemic is to be traced to the Celtic race who inhabit this city—in short, to the low and labouring Highlanders and Irish—and it is to be feared that unless a statute be obtained for Scotland, similar to the Vaccination Act which works so well in England, nothing else will effectually stay a disease which annually destroys—or, what is almost equally bad, blinds and deforms—hundreds in our city.—*Dr. Strang's Social and Economical Statistics of Glasgow.*

3. *Glasgow Medical Society, January 9th, 1855.*—Mr. Lyon in the Chair.—Dr. Yeaman was admitted a member of the society.

Dr. Gray read a paper on Tetanus, illustrated by references to three cases which had come under his notice. In the first of these, the patient had received a slight injury of the leg from a whip, followed, on the ninth day, by the first symptoms of tetanus, and terminating fatally seven days subsequently. The treatment consisted in the administration of tobacco enemata, the exhibition of indian hemp, &c. &c. The second case originated from a wound of the thigh, with bruises of body, hands, and face, and fracture of ribs. Pleuro-pneumonia supervened. The patient died five days after accession of tetanic spasms. Belladonna, tobacco enemata, and counter-irritation to spine, were the remedies employed. In the third case, tetanic symptoms followed a compound comminuted fracture of last phalanx of index finger of left hand. Amputation was resorted to on the third day after the accession of the spasms. Many remedies were tried without effect, and chloroform given to a large extent. The case terminated fatally. The urine passed on the two days preceding death was of a dark-brown colour, of high specific gravity; it had a fleshy odour, and contained the chlorides, sulphates, and phosphates in great abundance, also crystals of cystine and kreatinine. The body was examined after death. The median nerve was healthy. The muscles had a dark lake colour. The spinal cord at the origin of the brachial plexus was gorged with blood and surrounded with coagulated lymph, and within the membranes of the cord there were three ounces of fluid. The specific gravity of the various portions of the nervous system, taken fourteen days after its removal (during which time it was kept in spirits), was as follows:—Pons Varolii 1·0191, medulla oblongata 1·0127, crus cerebri 1·0174, crus cerebelli 1·0153, cervical portion of spinal cord at origin of brachial plexus 1·005, two inches most inferior portion of cord 1·017. The specific gravity of the healthy cord is stated to be 1·030. He contended that, as the alcohol would affect equally each part of the nervous centres, the comparative specific gravity of the individual portions of the cord itself might be obtained as accurately from this after maceration as when newly removed. From what cause, then, arose the great difference between the brachial and lumbar portions (1·005 and 1·017)? An inquiry of this kind might lead to a more correct knowledge of the pathological changes that take place in this disease.

Dr. Cowan was surprised that, after the recent decisive statistics of this disease published by Dr. Lawrie, the essayist had resorted to the use of remedies which had been proved perfectly unavailing. He would be inclined, in the present state of our knowledge, not to interfere further than supporting, as far as possible, the strength of the patient, and attempting to alleviate the spasms by the use of chloroform.

Dr. Smith thought that chloroform was particularly valuable as a means of husbanding the patient's strength.

Dr. Macewan had seen a case in which marked temporary relief was obtained by friction along the spine. There were no morbid appearances.

Mr. Lyon thought it would be beneficial to have some accurate information as to the inutility of remedies in such diseases as tetanus. His experience was that, where recovery ensued, it was not traceable to the influence of any remedy. He could have wished the essayist to have followed out the pathology of the subject a little more at length. The appearances in the spinal cord might be the consequences of the disease, not the cause. Is it not rational to suppose, or, at least, a fair hypothetical inference, that this disease, like hydrophobia, is the result of a poison absorbed into the system, and generated probably in the seat of the injury? As to the treatment, he now abandoned every plan suggested, and trusted to supporting the strength. Tobacco he thought a depressing, indian hemp a useless remedy. Laryngotomy had been found, as might have been anticipated, a complete failure.

Dr. Smith thought Mr. Lyon's hypothesis, as to the absorption of the poison, quite untenable, as it would not apply to cases of idiopathic tetanus.

Dr. Gray replied, and after some conversation on the subject of the New Registration Act, the society adjourned.

Jan. 23d, 1855.—Dr. Adams in the Chair.—The Secretary laid before the society a letter which he had received from Dr. Holland of Cork, requesting the co-operation of the members in an inquiry he was instituting regarding prostitution.

Dr. Wilson, jun., exhibited a peculiarly convoluted umbilical cord; also, the os uteri of a woman, aged 30, who had died on the eighth day after delivery. Pus oozed freely out of the uterine sinuses, and also upon division of the femoral and iliac veins. All her labours, with the exception of the last, had been tedious, but terminated without instrumental interference. The os uteri was divided by two bands, so as to form three openings.

Dr. Drummond exhibited two specimens of uterine polypi, which he showed principally with a view to demonstrate the value of sponge tents in diagnosis. In the first case the patient had long suffered from profuse menorrhagia, and was extremely depressed and weak. After dilating with a series of sponge tents, he applied a ligature by means of Gooch's double canula. In the second (a married lady, aged 30), the symptoms of polypus had been present for years. The polypus was also removed by ligature. He exhibited an instrument designed for the excision of polypi, and used by Professor Simpson.

Dr. E. Watson had not found the use of the sponge tents so easy as had been described, and considered the polypotome an extremely dangerous instrument. Scissors would serve the purpose generally quite as well.

Mr. Lyon thought the cases very useful, as showing the propriety of searching for polypi in cases of menorrhagia. He had found it sometimes impossible to use Gooch's canula from the presence of adhesions.

Dr. Adams had met with two cases, in which he had succeeded in removing polypi by the use of sponge tents and the ergot of rye.

Dr. Bell thought it would be important to lay down some general rule as to the period when it is justifiable to begin dilating with sponge tents. Upon this and other points a long discussion ensued.

Feb. 6th.—William Lyon, Esq., in the Chair.—A long and animated discussion followed some remarks made by Dr. Robertson on the New Registration Act, as affecting medical men. The most valuable statistical data, it was argued, would ultimately accrue from the operation of this enactment. On this point all were agreed; but the majority of the members who took part in the discussion, were of opinion that, in the penalties attached to the non-fulfilment of what must frequently be a troublesome, and, in many cases, a gratuitous labour, an additional illustration was given of the absence of that consideration due to the profession by those in power. It was further regretted that, in setting the machinery of this act in motion, the details had not been simplified by the issue of instructions to all legally qualified practitioners.

20th February, 1855.—Dr. Wilson in the Chair.—Dr. Drummond exhibited

what he believed to be a rare specimen of pancreatic disease. The patient, a male, had for some years suffered from dyspeptic symptoms. About six months ago he became jaundiced, and had severe pain in region of liver and in right shoulder. Three months since, a tumour was detected in lower margin of right lobe of liver. The man became ascitic with dropsy of lower limbs, and died slowly from exhaustion.

Drs. A. Buchanan, Gray, and Cowan saw the patient along with Dr. Drummond, and all agreed that the case was one of disease of liver—either an abscess or white tubercle. A *post-mortem* examination showed the pancreas enlarged and indurated, with an abscess at its duodenal extremity opening into the bowel. The liver was considerably enlarged, but only from simple engorgement. The tumour felt was the distended gall-bladder filled with a glairy fluid. The ductus communis choledochus was enlarged to ten or twelve times its natural size, and all passage of bile seemed prevented.

Dr. Cowan mentioned the case of a man whom, after labouring for five days from obstinate constipation, resisting the strongest purgatives, he had been called to see. The patient was weak, complained of intense pain in abdomen, and was in a very short time attacked with stercoraceous vomiting. He was seen by Dr. Lawrie when the pulse was extremely feeble. Brandy and opium were, at his suggestion, administered in large quantities. In the course of three days the patient had a natural evacuation, and soon became convalescent.

Dr. Adams had a case somewhat similar under his care. A man of an habitually constipated tendency took some opening medicine which failed to operate. He was attacked in a day or two after by hiccough, which had continued resisting every remedy, and he was now in an almost hopeless state.

Mr. Lyon had recently seen a case in which, after a fair trial of purgative enemata, which failed to produce an evacuation, he gave large doses of opium combined with calomel, and opiate injections. After the lapse of five or six days free evacuations came away, but the patient sunk and died. He alluded to the operation of gastrotomy, in which he apprehended the chief difficulty would lie in discovering the obstructed part. Notwithstanding this, however, if every other means of relief failed, he would consider it justifiable under favourable circumstances to operate.

Dr. Wilson had seen a case lately of obstruction, of seven days' standing, in a child. There was very great exhaustion, but no pain. Purgatives failed. A blister was applied, without relief; but after a dose of opium, followed by castor oil, a motion was obtained. In another case, purgatives and opium failing, air was injected with most satisfactory results. In these cases, he thought spasm the probable cause of the symptoms.

Dr. Bell had seen opium fail. He thought it was difficult to explain how it acted, and he could not believe that, in cases where there was no spasm or pain, it could do good. It probably acted by allaying irritation. He thought invagination more an effect than a cause of the disease, as the tube remained pervious, only narrowed in calibre.

Dr. Gray thought tumours were frequently causes of ileus. He had seen a case in which a tumour of the vertebral column had given rise to the symptoms.

Dr. Drummond suggested the use of the inhalation of chloroform in cases of obstinate hiccough. He had seen it completely successful.

Dr. Frazer was desirous of asking Dr. Bell whether he had ever seen the surfaces of invaginated portions of intestine not glued together? He should like also to obtain some information as to the experience of the members of nitrate of silver as a therapeutic agent. On this and other points a long discussion followed.

6th March, 1855.—Dr. Wilson in the Chair.—Dr. John R. Brown, Glasgow, and Dr. William Clark, Airdrie, were admitted ordinary members of the society.

Mr. Lyon commenced a discussion on stricture of the urethra. He thought the subject peculiarly interesting, and deserving the notice of the Society at the present time, when the attention of the profession generally had been so much directed towards it. After alluding to the methods usually adopted of treating

stricture, he mentioned the plan proposed by Mr. Wakley. To the use of the metallic bougie, generally had recourse to in this part of the country, there were the objections of its tediousness, occasionally even danger, and the impossibility at times of getting the instrument through the stricture. He had a case at present under his care, in which he had for ten weeks been foiled in passing an instrument. Supposing, however, that a small bougie can be passed through a stricture, he very generally succeeds in effecting a perfect cure in a week or ten days. It is absolutely requisite, however, that the patient should retain the instrument in his urethra during treatment, and, if possible, remain confined to the house. Once get a No. 1 through, and the rest of the process is rapid. He was inclined to believe that, in these cases, the cure was effected by suppuration. It has been objected to this method, that it induces ulceration of the canal; but he had never seen such a result follow. Mr. Syme avers that stricture always returns when treated by bougies, and he recommends the now well-known operation of the perineal section. Mr. Syme states that his is a rapid method of treating stricture, but he (Mr. Lyon) maintained that it was not more so than the more general practice he had described, and there was undoubtedly both difficulty and danger in performing the operation. About two months ago a patient was admitted into the Royal Infirmary, suffering from retention of urine, having previously been treated for stricture. The bladder was much distended, but the stricture being far forward, there was no great difficulty in introducing an instrument. On its withdrawal, however, all efforts to reintroduce it failed, and, retention being again present, he was obliged to cut down upon the urethra, not, however, having the advantage of an instrument through the stricture to direct him. The only guide in such a case is to cause the patient to strain. A drop or two of urine pressed out indicates the passage. In this case the bladder was reached; but this patient is only now well. He was inclined most strenuously to support the plan of treating stricture he had mentioned. He combated Mr. Syme's statement, that there was no such thing as an impermeable stricture. It was curious if Mr. S. could do what no other surgeon could. If Mr. Syme invariably passed instruments, it must be in bad cases, by sheer force breaking through the tissues, and not along the canal. Recurring to cases, Mr. Lyon mentioned another which had recently happened in the hospital, in which no instrument could be passed. Perineal section was resorted to, but no continuation of the canal could be detected. It was agreed to force a passage, which was at length done, but in two or three days the man died. On dissection, it was found that, in consequence of fracture of the pelvis of old standing, there had been a deposit of cartilaginous tissue in the course of the canal. In conclusion, Mr. Lyon narrated the history of an anomalous case of stricture which had occurred to him, and exhibited an instrument by which he had succeeded in curing it. (See Vol. II., p. 386.)

Dr. Adams demurred to the statement made by Mr. Lyon, that in the cases treated by the plan he had recommended, the removal of the obstruction took place by suppuration. He was more inclined to think it the effect of absorption. He would be very chary of adopting Mr. Wakley's method. The amount of evidence which had been brought forward, proved that Mr. Syme's operation was safer than had been represented by its opponents. He had, however, seen that gentleman foiled in passing an instrument through a stricture. In the case he referred to, Mr. Ferguson forced a passage, but extravasation followed, and the patient died.

Mr. Reid had found, in his experience of cases of retention of urine, that it was better, if the surgeon failed in introducing an instrument after a fair attempt, to desist. Order a warm bath. Give a large dose of calomel, and perhaps an injection. After the employment of these means, he had, in a large majority of cases, the satisfaction of finding the patient able to void his urine. He narrated the history of an obstinate case of stricture which he had failed to cure. The patient had the good fortune, however, to be tossed by a bull, and the result of the injuries received in the perineum was the radical cure of the stricture.

Dr. Gray defended Mr. Syme's operation.

Dr. Cowan thought the perineal section totally inadmissible in the only cases in which Mr. Syme recommended it, viz., in those in which an instrument could be introduced through the stricture. Its dangers had been understated. He drew attention to the case of a man, well known to some of the members, who was long in the Glasgow Infirmary, and was afterwards operated on by Mr. Syme, and mentioned as a cured case, in which there remained a fistulous opening.

Dr. Wilson said that the statements of Mr. Syme had not been borne out by the experience of other surgeons. Many of the most eminent practitioners in London had declared the operation to have proved a failure in their hands.

Mr. Lyon replied, and the society adjourned.

20th March, 1855.—Mr. Lyon in the chair.—The Secretary intimated that he had been invited, as representing the society, to a meeting in London, held for the purpose of procuring an amelioration of the condition of the assistant surgeons in the navy. He thought the society should express their opinions on this important question, and therefore moved the following resolutions:—

“That this society warmly sympathises with the efforts now being made by the medical students of the country, to effect an amelioration in the condition of the assistant surgeons of her Majesty’s navy.

“That, in the opinion of this society, the recent resolution of the Admiralty Board, to admit junior students to act in the Baltic fleet, and to have equal rank with assistant surgeons, is not only a direct insult to the permanent medical officers of the navy, and detrimental to the interests of the medical profession, but indicates a gross disregard of the welfare and safety of her Majesty’s sailors.

“And that this society pledges itself to co-operate with the profession generally, in securing a thorough reform of the navy medical department, and a due recognition of the status due to assistant surgeons.”

Mr. Lyon seconded the resolutions, which were unanimously adopted.

After some conversation on professional subjects, the society adjourned.

4. *New Medical Bill.*—Within the last week we have seen a draft of a new Medical Bill, which is understood to have emanated from the University of Edinburgh, and in the framing of which no other body, as far as we can learn, has been consulted, although the measure seems to be under the consideration of her Majesty’s Government, as copies can be procured at the Home Office. This bill, under the semblance of liberality to all the licensing boards, is neither more nor less than a measure for enfranchising the Universities, for conferring on them the right to license general practitioners under the title of Doctors of Medicine, on the same terms in all respects as the Corporations or Royal Colleges. Such an act of pure selfishness cannot for a moment be listened to by the profession at large, or by the corporate bodies, as a measure of medical reform.

The two leading features in the bill are—1st, The vesting the appointment of a governing “Medical Council of the United Kingdom” in the Crown. 2nd, Granting the right of general practice to graduates of all the Universities of the United Kingdom.

In regard to the first of these proposals we would ask, why is our profession to be the only one to whom is denied the privilege of regulating and managing its own affairs? All other professions and callings govern themselves through their corporate bodies, and why is the medical profession to be an exception? From our experience of Crown appointments we would not augur a very wise selection. Political opinions, and political influence, would have much more weight than professional attainments or merit in the appointment of the members of such a council. In as far as Scotland is concerned, the Lord Advocate of the day would be the patron of our profession.

The other feature is the more important, as it strikes a blow at the existence of the present licensing boards, which have exercised their privileges with so much benefit to the country for centuries past. It proposes that a license or title from any medical board or University at present in existence, shall be considered a qualification for general practice. This, on the surface, has the

appearance of fairness, but, examined more closely, it will be seen to be most damaging. It takes from the Royal Colleges and Faculty of Physicians and Surgeons, and gives to the Universities. At present, if an M.D. wishes to act as a general practitioner, he must take his surgical diploma—if he does not, he is practising illegally, and is liable to prosecution. By this bill the necessity for taking a surgical diploma will be removed. The Royal Colleges and the Faculty will be robbed of the right, which they alone possess, to license surgeons, and in return will get nothing.

In an explanatory statement attached to the bill, an attempt is made to uphold the erroneous opinion that a degree from a Scottish University confers a right to practise; and this opinion is grounded on the issue of a lawsuit between the Faculty and the University of Glasgow, finally decided by the House of Lords in the year 1840. The reference to this case is most unfortunate, for it shows that the framers of the bill are either very ignorant on the subject, or guilty of wilful misrepresentation, as the lawsuit referred to has in reality nothing to do with the matter; it was simply an action to try whether the title of Master of Surgery (C.M.) which the University of Glasgow began to grant within the last few years, was equivalent to a Diploma from the Faculty of Physicians and Surgeons, and it was decided in all the Courts that it was not—that the holders of such a title had no right to practise as surgeons within the jurisdiction of the Faculty. If our readers will refer to the evidence before the Committee of the House of Commons in 1848, they will see in what light the degree of M.D. is regarded by the professors themselves. Dr. Christison's evidence was, that the degree of M.D. from a Scottish University confers no legal privilege, but has been received by courtesy as qualifying for physician practice.

We have our own views on the distinctive functions of the Universities, and of the medical corporate bodies, but meantime we are only calling the attention of the members of the profession to the proposed measure, which, we doubt not, they will stamp with their unqualified disapproval.

5. *Naval Assistant Surgeons.—Glasgow Students.*—We are glad to find that the students of Glasgow are showing a laudable *esprit de corps*, by speaking out on a subject which has long been one of the opprobria of our profession. The students of Anderson's University received an invitation from the London students to co-operate with them in their representations on the subject. A meeting was held on the 13th March, at which it was determined to have an expression of opinion of the students of both Schools combined, and accordingly the students of the College and Anderson's University met together, and unanimously agreed to the following resolutions:—

"At a Meeting of the Students of the Glasgow Schools of Medicine, held at the College, High Street, on Thursday the 15th day of March, 1855, the following resolutions were unanimously passed:—

"1st. That this meeting considers the present position of the naval assistant surgeons as inconsistent with the dignity of the medical profession, and detrimental to the efficient performance of their duties.

"2nd. That the students of the two Universities will not enter the Navy as assistant surgeons under the present Admiralty regulations.

"3rd. That the students will not accept the recent offer of the Admiralty to become dressers in the Baltic fleet.

"4th. That a subscription be entered into for the purpose of defraying the necessary expenses.

"College, Thursday, March 15th, 1855.

R. ADAMSON, *Hon. Sec.*"

6. *Glasgow Medico-Chirurgical Society.*—The first meeting of the session took place on Tuesday evening the 13th March. The following were the office-bearers elected for the ensuing session:—*President*, Dr. James Wilson. *Vice-Presidents*, Dr. Allen Thomson, and Dr. J. G. Fleming. *Council*, Dr. Easton, Dr. McGregor, Dr. Joshua Paterson, Dr. William Aitken, Andrew Fergus, Esq., and Dr. P. Stewart. *Secretaries*, William Lyon, Esq., and Dr. Thomas Watson. *Treasurer*, Dr. John Coats.

Dr. Allen Thomson read the first part of a paper on the origin and development of Entosoa. We expect to present this interesting communication to our readers in the next number of this Journal.

7. Report of Glasgow Lying-in Hospital and Dispensary.—The following report contains a brief analysis of the obstetric practice of the institution during the year ending 15th November, 1854.

The number of women who received the benefit of this charity was 867. Of these, 427 were delivered in hospital, and 440 at their own houses. Ten deaths occurred at the hospital, and seven amongst the out-door cases. The number of children born in hospital alive was 413: of these, 233 were boys, and 180 girls. The still-born at full time were 14, viz., 6 males and 8 females; and the premature still-born were 4 boys and 6 girls. There were ten twin births. The total number of children, therefore, born in the hospital, amounted to 437. The number of children born at their mothers' houses, and who did well, was 405; of whom 206 were boys and 199 girls. The still-born at the full period amounted to 22, viz., 13 boys and 9 girls. The premature still-born were 13 males and 6 females. The twin cases were 6 in number. The whole of the children, therefore, born out of the hospital, was 446, which, being added to 437, gives a total of 883.

The præternatural and operative cases in hospital amounted to 23. The breech presentations at the full time were 7—2 boys and 5 girls, 2 of which were dead; and 2 premature, both boys, alive. The footling cases at the full time were 2, both females, alive, one of which was accompanied with prolapse of the cord. There were 3 cases of head and cord presentation at the full time, all of which were males, 2 of them being still-born. There was 1 case of arm presentation, requiring turning; the child (a male) was still-born, and at the full time. Craniotomy was performed in one case. The woman died. The forceps were had recourse to in 4 cases, of which 2 children were still-born, and 2 were saved. They were all boys. There was 1 case of puerperal convulsions, the child (a boy) being alive, which, with the mother, did well. There were 2 cases in which manual extraction of the placenta was rendered necessary, in consequence of morbid adhesion. In the above cases all the mothers recovered, with three exceptions.

The præternatural and operative cases out of hospital amounted to 38. Of these, 4 were breech cases, the children, with one exception, being born alive. There were 5 footling cases—3 of the children were still-born, and 2 alive. The cord presented in one case along with the breech, in another with the abdomen, and in a third with the head. Turning was had recourse to in the two latter cases. One mother died, and both children were lost. The arm presented in 3 cases, in all of which delivery was effected by turning; all the mothers did well, and two of the children were saved. There were two shoulder cases, in which turning was had recourse to; both the mothers did well, and the children were both dead. There was one case of complete placental presentation, in which the plan advocated by Dr. Simpson was had recourse to, viz., separation and extraction of the placenta before the child. On the removal of the placenta, the arm was found to present, and delivery was effected by turning. The mother, prior to operative interference, had lost an immense quantity of blood, was pale, collapsed, and nearly pulseless, and only survived one hour after delivery. The child was dead. The forceps were applied in 7 cases; 2 of the mothers died, and 5 of the children were saved. Puerperal convulsions occurred in 3 cases; 1 of the mothers died, and 2 of the children were still-born. There were 2 cases of hour-glass contraction, and 5 cases in which the cord was coiled once or more times around the child's neck at birth. In the foregoing cases all the mothers did well, with four exceptions.

The following particulars connected with these cases are also worthy of record:—Average duration of labour in hospital, 7 hours, 45 minutes; do., out of hospital, 10 hours, 7 minutes. Average number of days for each patient in hospital, 7 days, 18 hours. Average weight of each male child in hospital, 7½ lbs.; do.

female do., 6½ lbs. Average length of child in hospital, 19½ inches. Number of Scotch delivered in hospital, 275; do. Irish do., 148; do. English do., 4. The maternal deaths, also, as already stated, amounted to ten, and the causes of which may be briefly stated as follows:—

Three were admitted, labouring under long-standing cardiac disease, and which proved fatal in each case a few days after delivery. One died from acute pleuritis, which had been neglected prior to admission. Another woman died from exhaustion, consequent on cholera. Two deaths are ascribed to puerperal phlebitis; one to hæmorrhage prior to admission; and two to exhaustion, resulting from protracted and difficult labour in debilitated subjects, rendering the use of the forceps and perforator necessary.

The seven deaths which occurred amongst the out-door cases are ascribed to the following causes:—Two from exhaustion, necessitating the use of instruments; two from hæmorrhage, one of which was complicated with variola of a very virulent type; one from low typhoid fever, after convulsions and the use of the forceps; one from puerperal fever; and one from hæmorrhage, in a case of placenta prævia. A glance at the above will suffice to show that the great majority of the maternal deaths was the result of a non-puerperal disease.

8. *Quarterly Report of the State of Disease in the Glasgow Royal Infirmary.*—During the first quarter of the year 1855, the number of patients admitted was 970; of whom, 673 were medical and surgical cases, and 297 fever cases, under the latter including 34 small-pox cases. Of medical and surgical cases, 561 were dismissed cured, relieved, or from other causes, and 64 died. Of the deaths, a large proportion—about 50—occurred in the medical wards. The number of deaths in the surgical wards, which are the most numerous, have been singularly small, amounting to 14; and not a few of these occurred in cases of serious accident, in which recovery was not to be expected. The great severity of the present season has been the principal cause of mortality in medical cases; a large proportion of which have been cases of phthisis, in the most advanced stage of the disease. In the fever wards, 277 were dismissed cured and 37 died. Many of the fever cases have been of a mild description, and the mortality has been small. A considerable number of operations have been performed during the quarter, of the principal of which we give the following brief resumé:—

1. *AMPUTATIONS OF THE LOWER EXTREMITY.*—1. *Of the Thigh.*—There were two cases—one primary, and one secondary—both of which were successful.

J. W., aged 12, was admitted with compound dislocation of the knee-joint; and it having been determined that amputation was necessary, the operation was performed on the 20th Jan., and he had a speedy and favourable recovery.

R. P., aged 34, was admitted with strumous disease of the knee-joint. There being no other chance of saving the patient's life, the leg was removed. There was little disturbance of the system in consequence of the operation, and no untoward symptom occurred to retard his recovery.

2. *At the Ankle-Joint.*—There were two cases, both the result of strumous disease, and both successful.

J. M'A., aged 16, was admitted with extensive caries of the tarsal bones, and it having been found that nothing short of the removal of the whole foot would be of any service, an operation was performed at the ankle-joint, and the patient speedily recovered.

R. M'G., aged 24, was admitted with strumous disease of the ankle-joint. The foot was removed at the joint, and he soon recovered, and was dismissed when the wound was nearly healed. This patient has been readmitted, on account of a small opening communicating with a portion of dead bone. He is in excellent health, and the inconvenience arising from the sinus will soon be removed.

3. *Of part of Foot.*—*Lisfranc's Operation.*—There was one case, which proved fatal.

A. K., aged 40, had his foot crushed by a railway truck. The above opera-

tion was performed, but extensive cellulitis of the thigh, with profuse suppuration having supervened, he died.

II. AMPUTATIONS OF THE UPPER EXTREMITY.—1. *At the Shoulder-Joint.*—There were two cases, both primary, and both successful.

W. P., aged 15, was admitted with extensive laceration and fracture of the arm by machinery. The arm was removed at the shoulder-joint, shortly after admission, on the 9th Feb. He recovered remarkably well, and was dismissed cured on the 7th March.

J. B., aged 10, was admitted with his arm torn and shattered by a wheel, and shortly after admission the arm was removed at the shoulder-joint, and though not yet dismissed, he is now nearly well.

2. *Of the Arm.*—There was one case, which proved fatal.

J. R., aged 12, was admitted with his fore-arm crushed by machinery, and amputation was performed above the elbow on the 23d Jan.; but symptoms of pyæmia appeared soon after the operation, and he died on the 7th Feb.

3. *At the Wrist-Joint.*—One case, successful.

Mary M., aged 18, was admitted with the hand crushed by the rollers of a threshing-machine, on the 12th Jan. The hand was removed at the wrist-joint, and the patient was dismissed cured on the 2d Feb.

III. LITHOTOMY.—There were 2 cases, both of which were successful.

W. D., aged 18, was admitted from Kilmarnock, a district most prolific of such cases, with calculus in the bladder. Had symptoms of the disease for fourteen months. The usual lateral operation was performed on the 22d Feb., and he was dismissed cured on the 15th March.

J. K., aged 16, was admitted with symptoms of calculus in the bladder, of two and a half years' duration. The operation was performed with Dr. A. Buchanan's rectangular staff, on the 4th Feb., and he was dismissed cured on the 1st March.

In our last report, in speaking of three cases of lithotomy, we used the following expression—"In all these cases, the *common* lateral operation was performed; the first and third with the curved, and the second with the rectangular staff." To prevent misunderstanding, we beg to state that the expression, "*common* lateral operation," does not strictly apply to the rectangular method.

IV. HERNIOTOMY.—One case successful.

C. L., aged 30, admitted with strangulated femoral hernia, of two days' standing. The usual operation was performed on March 4th. The sac was opened, and the strangulated omentum, in which was found a cyst containing fluid, was returned, and the patient was dismissed cured on 26th March.

V. TENOTOMY.—One case cured.

C. M., aged one year, admitted with congenital talipes varus. Stromeyer's operation of dividing the tendo-achillis was performed, and a suitable apparatus for placing and retaining the foot in the normal position was applied. The deformity by this means was removed.

VI. LIGATURE OF ARTERIES.—J. F., aged 60, was admitted with traumatic aneurism of the facial artery of five weeks' standing. A ligature was applied to the artery at the seat of the injury, and the patient was dismissed cured.

VII. EXCISION.—1. *Of Ankle-Joint.*—J. M'M., aged 20, admitted with compound dislocation of the ankle-joint. The external wound was on the inner aspect of the joint. The internal malleolus, which was fractured, was removed by the wound. The extremity of the fibula being also fractured, but there being no external opening, an incision was made on the outer side of the ankle, and about two inches of the fibula removed. The foot was then adjusted in a suitable position. The suppuration has been profuse, but is now much diminished, and there is every prospect that the patient will recover.

2. *Of Shaft of Tibia.*—D. R., aged 45, was admitted with necrosis of the tibia in consequence of an injury. His general health having suffered much in consequence of the profuse suppuration and great irritation caused by the presence of so large a mass of dead matter, it was determined to remove the shaft of the bone. This was accordingly done on the 24th January. Ever since the opera-

tion the patient has improved in his general health, and is likely soon to be dismissed cured. In this case it will be interesting to know how far, if to any extent, the bone will be restored from the epiphyses.

3. *Of part of Tibia.*—M. N., aged 48, was admitted with necrosis of tibia. This patient came into the house with the view of having his leg amputated; but it was determined that the necrosed portion of bone should be alone removed. This was accordingly done, and the patient, who is still in the house, is doing well.

4. *Of Tumour in the Mamma.*—A. M., aged 23, was admitted with tumour in the mamma, of two years' standing. The tumour was removed on the 3d Feb., and the patient was dismissed cured on the 8th March.

VIII. PERINEAL SECTION.—Two cases, one cured and one died.

W. C., aged 41, was admitted on 1st January with stricture of the urethra, and great extravasation of urine. The section of the perineum was performed, and the patient was dismissed cured on the 2d March.

R. H., aged 22, was admitted with distressing abdominal symptoms, indicating peritonitis and retention of urine. It was at first supposed that these symptoms were owing to the retention of urine; but it having been found impossible to introduce a catheter, it was determined that section of the perineum should be performed. This was accordingly done, and the bladder was relieved, but the patient died on the day after the operation. The *post-mortem* examination revealed the fact, that the bladder was extensively diseased, and that there was such an amount of peritoneal inflammation, which evidently existed previous to the operation, as to be sufficient to account for death.

Besides the operations which we have specified in the above brief notice, many others have been performed during the quarter, which our space will not allow us to mention: and while the success which has followed these operations must prove the source of no small gratification to the surgeons, Drs. Hunter, Fleming, Lyon, and Corbett, who have performed them, we may state, what may appear to some unnecessary, that we have not knowingly omitted any unfavourable or fatal case.

We may take this opportunity of noticing and correcting an error of omission in an article in the last number of the Journal, on the Statistics of the Glasgow Royal Infirmary, in which it is stated, under the head "Excision of the Ankle-Joint," that there were two cases of this operation which proved fatal, one in 1846 and one in 1851. There was a third case, already twice noticed in this Journal, first in No. III., by Dr. Steele, in the following terms:—"Among novelties in operation, we have chiefly to allude to a case under Dr. A. Buchanan, in which excision of the ankle-joint was had recourse to from caries of the ends of the bones forming the articulation. The results of this unusual and so frequently condemned operation, have been in the highest degree satisfactory, the patient, now four weeks since the operation, never having had a symptom that would retard recovery, and the union of the parts, in the interval, has proceeded as favourably as could be desired;" and, second, in No. IV., in the following terms:—"The case of excision of the ankle-joint, by Dr. A. Buchanan, alluded to in last report, was dismissed nearly well a short time ago." In reference to this case we are glad to state that the patient is quite well. In estimating the value of this operation, therefore, it must be borne in mind, that of the three operations recorded in our statistics, one was undoubtedly successful; and it is hoped that the case referred to in this report may be added to the successful list.

9. *Death of Robert Macgregor, Esq. M.D.*—It is with deep regret we record the death of Dr. Robert Macgregor, one of the physicians to the Glasgow Royal Infirmary, and an occasional contributor to this journal, which event took place on the 20th of March last. Few men had a more extensive circle of acquaintance, or more warmly attached friends. From a profession in which he had achieved great successes, and a social position which opened up to him every prospect of honour and emolument, he has been cut off at the early age of 45 years.

Dr. Robert Macgregor was a native of Ardhattan, Bonaw, near Oban, Argyshire, where his aged relatives and family still reside. After receiving such elementary instruction as could be imparted in his native village, he was sent, when about 15 years of age, to this city, in the University of which he successfully cultivated classical literature, and acquired the rudiments of medical science. At this period he became the pupil of the late Mr. John Stirling, an able and accomplished practitioner, a dexterous operating surgeon, and an enthusiastic teacher of anatomy in the Portland Street School of Medicine. Under such tuition the strong natural talents of young Macgregor were evoked, and matured to such a degree that he became the intimate friend and companion, and ultimately the colleague, of his accomplished preceptor. Before entering on the duties, however, of lecturer on Chemistry in the School of Medicine already referred to, Dr. Macgregor had resided for several years in the Glasgow Royal Infirmary as superintendent and apothecary, in which institution he conducted those investigations into the nature of Diabetes, which at once stamped him as an accurate observer and an original thinker, and acquired for him a European reputation. The experiments and observations which he made on Diabetes were presented to the scientific world in the form of a probationary essay to the Faculty of Physicians and Surgeons of Glasgow, when he became a member of that body in the year 1837. To Dr. Macgregor belongs the merit of unfolding the true nature and pathology of the dreadful malady just named, and of directing the medical profession to sounder views and more rational practice. This just tribute to minute observation, untiring industry, and logical inference, has been willingly conceded to our lamented friend; and in all the standard works on medicine, which have since appeared throughout the civilized world the name of Robert Macgregor has been identified with Diabetes. It consists with our knowledge, that Bouchardat of Paris, one of the highest authorities on renal diseases in France, and the late Golding Bird, who occupied a similar position in London, both expressed their personal obligations some years ago to our friend, when on a visit to these respective capitals. When in our Royal Infirmary, he also made a series of observations regarding the quantity of carbonic acid which is expired from the lungs under certain circumstances, more especially in reference to the amount given off when the skin is rendered unable for the discharge of its functions by the existence of small-pox and similar diseases. These observations, likewise, have been favourably received throughout the world of medicine. Subsequently, he became one of the physicians in that Institution in which, at a very early age, he had laid the foundation of those well-merited honours which his medical brethren in all countries had done themselves honour in conferring. To the higher duties of physician to our Infirmary, he brought, in his maturer years, the same patient observation, the same ceaseless industry and zeal which had characterised him in his younger days, when he acted as superintendent and apothecary. Dr. Macgregor had also an extensive private practice, and seldom failed to become the personal friend, as well as the professional adviser, of those who required his aid.

It would be unpardonable to close this brief memorial of our late able and excellent townsman, without referring to his unwearied and invaluable services, rendered in every possible shape, to the poor Highlanders. There was not, we believe, a society in this city connected with the Highlands, of which he was not an active and zealous member. Under a retiring and unobtrusive disposition, he concealed a heart that never failed to respond to any appeal uttered by a Celtic tongue, and among the many who will feel his loss, his Highland countrymen, always deep and earnest in their attachments, will, perhaps, next to his actual relations, chiefly mourn his early decease, and cherish his amiable memory.

For a considerable time past, the health of Dr. Macgregor had been fatally shaken. An attack of inflammation of the lungs, caught, we understand, from emerging on a cold night from the heated wards of the Infirmary, caused his life, about two years ago, to be despaired of; and although he afterwards rallied so far as to resume his professional labours, the seeds of disease were irrecoverably

implanted in his constitution, and no treatment could arrest the fatal termination. Dr. Macgregor was unmarried.

10. *Death of Dr. W. R. Gibb.*—We have to record, with much regret, the demise of Dr. William Richardson Gibb, which took place on 25th Feb., 1855. Dr. Gibb was well known to all the senior members of the profession in Glasgow as a well-informed practitioner, and a most amiable and social companion. He was a graduate of Glasgow University of 1811, in which his father held the Chair of Oriental Languages. For a short period Dr. Gibb served in the army, as surgeon to the 88th Regiment, was in the peninsula under the Duke of Wellington, and was present at several of our most important engagements there. He was also in Canada for some time, and was quartered in Paris during the occupation of the city by the allies after the battle of Waterloo; and he was afterwards for some years surgeon to the Glasgow Royal Infirmary, and also to the Lock Hospital. For a considerable time past he had retired from the active duties of his profession.

BOOKS RECEIVED.

- On the Mode of Communication of Cholera. By John Snow, M.D. 2d Edition. London: John Churchill. 1855.
- The Pathology of the Bronchio-Pulmonary Mucous Membrane. By C. Black, M.D. Part II. Edinburgh: Sutherland & Knox. 1855.
- On the Statics of Pregnancy. By Matthews Duncan, M.D. Edinburgh: Neil & Co. 1855. (Reprinted from *Edinburgh Medical and Surgical Journal*.)
- Contributions to Experimental Physiology. By Bennet Fowler, M.D. Pp. 19. New Orleans: Joseph Cohn. 1852.
- Tableaux, Geographical, Geological, and Sanitary of New Orleans. By Bennet Fowler, M.D. Pp. 39.
- A New Plan of Treating Ununited Fracture. By Henry H. Smith, M.D. Philadelphia. 1855. (Reprinted from *American Journal of the Medical Sciences*.)
- Reports Furnished to the Directors of the Gorbals Gravitation Water Company, on the Action of Water on Lead. Pp. 125. Glasgow: James M'Nab. 1855.
- The Edinburgh Medical and Surgical Journal, January, 1855. (In Exchange.)
- The Retrospect of Medicine. Edited by W. Braithwaite, M.D. Vol. 30. July to December, 1854. London: Simpkin, Marshall, & Co. (In Exchange.)
- The Half-Yearly Abstract of the Medical Sciences. Edited by W. H. Rankin, M.D., and C. B. Radcliffe, M.D. Vol. 20, July to December, 1854. (In Exchange.)
- The Journal of Psychological Medicine. January, 1855. (In Exchange.)
- The Dublin Quarterly Journal of Medical Science. Feb., 1855. (In Exchange.)
- The Medical Examiner. Philadelphia, November and December, 1854, January and February, 1855. (In Exchange.)
- Memphis Medical Recorder, for November, 1854. (In Exchange.)
- Nashville Journal of Medicine and Surgery. January, February, and March, 1855. (In Exchange.)
- The American Journal of the Medical Sciences. January, 1855. (In Exchange.)
- The Medical Chronicle, or Montreal Monthly Journal of Medicine and Surgery. November, 1854. (In Exchange.)
- The Indian Annals of Medical Science: a Half-Yearly Journal of Practical Medicine and Surgery. No. 3, October, 1854. Calcutta: Lepage & Co.
- The Dublin Medical Press. (In Exchange.)
- The Dublin Hospital Gazette. (In Exchange.)
- The Association Medical Journal. (In Exchange.)
- The Medical Circular. (In Exchange.)

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[No. 10.

ORIGINAL COMMUNICATIONS.

I. *Statistical Report of Three Thousand Three Hundred Cases of Obstetrics.* By John Thomson, Surgeon, Kilmarnock.

THE important position which obstetrical medicine now holds, as a separate branch of medical education, renders it necessary, more especially for those who are just entering upon their profession, that facts should be collected, and presented for perusal, in as condensed a form as may be consistent with perspicuity. The 3,300 cases referred to in this report consist entirely of those which have occurred in my own private practice, extending over a period of about fifteen years, and exclusive of all I may have seen in the practice of others. By adopting this method, a person who has just commenced his professional career, will be able to form some idea of the difficulties he may be called on to meet, in his practice as an obstetrician. I hope and believe, for the sake of humanity, that the day is not far distant, when the term, Midwifery, will be obliterated from the page of medical history. Hitherto the term has not unfrequently been applied in the way of reproach, but in so far as my opportunities of observation extend, the conviction is becoming every day deeper, that this branch of practice requires a knowledge not less extensive, and a judgment not less prompt and matured, than any of the other departments of medicine or surgery. Cases will occasionally occur, sufficiently appalling to test the coolness and discrimination of the most experienced practitioner. In many instances, delay is not less dangerous than premature or misdirected measures. Here there is certainly not the same scope for the display of dexterity in manipulation, or in the use of cutting instruments, which is presented to the aspirant after fame in the operating theatre. But, at the same time, it must be remembered, that wherever the life of a fellow-creature hangs quivering in the balance, whether in the lowly cottage of the poor, or in the

stately mansion of the rich, every appliance which science or experience can suggest ought instantly to be put in practice. Little doubt can remain on the mind of any one who has interested himself in these matters, that, in many cases, not only may a tedious labour be wisely and judiciously abridged, but even the amount of foetal or maternal mortality very considerably diminished, by the nature of the aid and influence which are brought to bear upon them by the practitioner in attendance. In the cases here referred to, not only was a note of everything abnormal carefully taken at the time, but the nature and result of the treatment adopted was written down, in every case which seemed of sufficient importance to render this necessary.

The following table will exhibit at a glance the number of preternatural and instrumental cases, with the amount of mortality that was experienced:—

Presentations.	No. of Cases.	Maternal Recoveries.	Maternal Deaths.	Still-born.
Breech,.....	18	18	—	5
Face to pubis,	28	28	—	—
Face,	6	6	—	—
Shoulder,.....	5	4	1	5
Placental,.....	5	3	2	—
Forceps cases,.....	46	46	—	2
Complicated with convulsions,.....	6	6	—	5
Funis umbilicalis,.....	3	3	—	2
Ovarian tumour,.....	2	2	—	1
Footling,.....	6	6	—	—
Contracted pelvis,	1	1	—	—
Flooding,	8	7	1	—
Puerperal fever,	17	10	7	—
Twin cases,.....	25	25	—	—
Puerperal mania,	2	1	1	—
Still-born,.....	—	—	—	56

Before proceeding to refer to some of the more remarkable cases which occurred, it may not be uninteresting to offer a few observations on what may be considered as the mechanism of parturition. A proper understanding of this not only points directly to a safe and successful practice, but will obviate many difficulties which otherwise might present a formidable appearance.

In cases of *primi paræ*, labour is very often protracted much beyond the duration which is afterwards experienced by the same individual. Many remedies have been proposed, and numerous expedients recommended, for the purpose of hastening on the labour, and, if possible, of bringing it to a quicker termination than seemed likely to be the case, if the efforts of nature were left unaided and unassisted. Denman says, "From this source may be traced the opinion of the necessity, and the abominable custom, of giving assistance, as it is called, by dilating the internal and external parts artificially; of giving hot and cordial nourishment during labour, even in plethoric habits and feverish constitutions, by which the nature of the principle which should actuate the uterus is changed, the pains are rendered disorderly and imperfect,

and the foundation of future mischief and difficulties, in one form or other, invariably laid."

"A variety of means," says Dr. Burns, "were at one time employed for exciting the action of the uterus; such as forcible dilatation of the os uteri, and the use of emetics, purgatives, or stimulants. A very different practice now happily obtains." Still, under certain circumstances, he recommends saline clysters, venesection, opiates, gentle friction on the abdomen with the hand, gently dilating the os uteri, rupturing the membranes, &c. Dr. Fleetwood Churchhill recommends the same remedies, with little alteration; and both Burns and the latter writer concur in advising the use of the ergot, under certain conditions, without reference to the labour, whether a first or a subsequent one. Dr. Lee states that the most important remedy, in cases of rigidity of the os uteri, is doubtless venesection, which not only promotes the dilatation of the parts, but checks the disposition to inflammation and fever. In reference to the ergot of rye, he observes, "I have never ventured, either in public or private practice, except in cases of accidental uterine hæmorrhage and retained placenta, to administer the ergot of rye to a woman in labour, and I am satisfied that no individual under my care has suffered from the want of it." And farther on he says, "It is agreed on all hands that ergot ought not to be given in first labours."

In the published lectures of Dr. Tyler Smith, the following observations occur:—"Time and patience, waiting for the result of the uterine actions, and avoiding all uterine excitation, are generally sufficient to overcome the ordinary cases of rigidity, especially if the liquor amnii has not been evacuated. In plethoric cases, bleeding is often of great use; and where general depletion is inadmissible, the application of leeches to the os uteri would prove of great service. Nauseating doses of tartrate of antimony or ipecacuanha are important remedies." According to this author, warm enemata and the warm bath are also measures of some importance in relaxing rigidity of the os uteri.

In reviewing the writings of obstetric authors for the last sixty years, in this department of our subject, it appears that the same remedies have been prescribed throughout, with very little variation indeed. While some of our modern discoveries, vamped up in the meantime as improvements of the greatest magnitude, it is to be feared, will eventually turn out as no improvements at all. *Secale cornutum*, after having come into general use for the last twenty-five years, seems now, with few exceptions, in a fair way of being laid on the shelf, and with every appearance of being covered with the dust of a hoary antiquity. Chloroform, as far as my opportunities of observation extend, is fast following in its wake. *Requiescat in pace.*

There are few of the remedies above recommended that I have not put into practice at one time or other, especially in the earlier

part of my career, sometimes with apparent benefit, and sometimes with little success; so that, for a number of years, I have felt but little inclined, except under rare and very peculiar circumstances, to use any of them at all. And, if I may judge from the greater amount of success that has attended the latter part of my practice, I do not think that any of my patients have suffered in the slightest degree from the change.

Before the mechanism of parturition can be rightly understood, or the reason in any measure comprehended, why labour in one case should be quick, and in another slow, some reference to the anatomical construction of the uterus becomes indispensably necessary. One of the latest writers on anatomy says, "that the fibres of the muscular coat of the impregnated uterus are of large size and distinct, and disposed in two layers, superficial and deep. The superficial layer consists of fibres, which pursue a vertical direction, some being longitudinal, and others oblique. The deep layer consists of two hollow cones of muscular fibres, having their apex at the openings of the Fallopian tubes, and intermingling with each other, by their bases, on the body of the organ. Around the cervix uteri, the muscular fibres assume a circular form, interlacing with and crossing each other at acute angles."

I have long been convinced, that this view of the anatomical structure of the uterus explains much of the mystery in which cases of tedious labour are in many instances involved. In a natural case, the action of the two sets of fibres is harmonious, the one not interfering with or counteracting the effect of the other, and generally the labour is quickly and easily accomplished. But in other cases, in which, from anything that comes within the sphere of observation, the parturient efforts ought to be as speedily crowned with success, it unfortunately happens that the very reverse is the case. The pelvis, in its formation, may literally be without a fault, either in respect of symmetry or dimensions; the health may be good, the mind buoyant with hope, and everything as favourable as could be wished; and yet, hour after hour, we are compelled to wait, and to wonder why, with all the severity of the suffering to which the patient is subjected, the progress of the labour continues so tardy, and so unsatisfactory. Again and again we examine, in the confident expectation that now, surely, things must be rapidly approaching to a crisis. Still, however, we are doomed to disappointment. The presentation remains long high up, and but little affected by the pains. On examination, we find that the os uteri is rather contracted than dilated during a pain; that the vagina, from sympathy or contiguity, seems to participate in the same perversity of action; and that even the vulva, instead of becoming gradually relaxed and softened, is actually drawn upwards and inwards, during every successive recurrence of the pain. In such a case as this, nothing but a tedious and a protracted labour can

be looked for or expected. The circular fibres seem alone to be in vigorous action, while the longitudinal remain altogether in abeyance; or if the longitudinal are really at work at all, the circular seem so far to have obtained the ascendancy, as completely to arrest, or at least to neutralise, the action of the former. I find a case referred to in my note-book, where, after the head had been delivered, the pains altogether ceased, and very considerable force was required, in order to free the body from the firm embrace of the uterus and vagina.

As a general rule, it is in cases of the first confinement where we expect to find labour difficult and protracted. But, as in all similar instances, there are exceptions to the general rule here also. It has frequently occurred in my own practice, as I am sure it must have done in the practice of others, that there are certain individuals whose labour we experience to be uniformly protracted and severe; a few, and fortunately enough but a few, who, almost in every successive confinement, require the use of the forceps, in order to terminate a tedious and exhausting process. If we carefully examine into the reason why this should continue to be the case, we will find it somewhat difficult, under the ordinary and generally received opinions, to offer anything like a satisfactory explanation. The pelvis may be large and well formed, the pains frequent and severe, the os uteri largely dilated, the membranes unruptured, and every appearance, as far as a judgment can be formed from external circumstances, of a speedy termination to parturition; and yet, notwithstanding of this, hour after hour passes away, alike to the annoyance of the patient and the practitioner, while very little progress is made. No doubt, with the simple exercise of patience, the labour is generally, at last, safely accomplished. But the question under consideration is this—Can any satisfactory reason be assigned why, in one case, labour is both shortly and easily finished, and in another, as nearly as possible under the same circumstances, it should turn out a difficult and long-continued process. In this instance, setting aside altogether those considerations which are usually supposed to influence first confinements, we can offer only one explanation; and that is, that the circular and longitudinal fibres are not acting harmoniously, and that, during every successive pain, the circular fibres seem alone to be in operation. Here there is little natural resistance offered to the easy descent of the head, but the entire action of the uterus seems to consist in firmly embracing the body of the child. In course of time, however, the head comes to rest on the perinæum, and now we expect that the labour will be over in another pain or two. Still we are doomed to disappointment, for what would be accomplished under more favourable circumstances in a few minutes, may, in this instance, be lengthened out for an hour or two more. In such a case as this, the very sound of the voice of the patient during a pain will enable any

one to say, that the pains are what is popularly called unnatural. The mother herself is fully sensible of this, keeps repeating that her labour is doing her no good, and generally becomes peevish, restless, and impatient.

In many cases, I have observed a curious coincidence in the kind of labour experienced by the mother and her daughter. If the mother had been accustomed to suffer from a protracted parturition, so also has the daughter, and *vice versa*. If the mother had been subject to flooding after childbirth, so also has the daughter.

But the question may now very properly be asked—Well, what is to be done in order, if possible, to abridge the sufferings of the patient, and relieve the medical practitioner from an irksome and disagreeable position? Suppose we try a smart clyster in the first place; then this usually has very little effect. If the os uteri is well dilated, we next rupture the membranes, and discharge the liquor amnii; but this only makes matters worse, for while the pains are greatly increased in severity, the advancement of the labour is not perceptibly increased. Foiled in our purposes and intentions hitherto, we next proceed to administer *secale cornutum*. The uterus, already in a state of over-action, comes speedily under the influence of the ergot, and now the sufferings of the patient are not only greatly aggravated, but they are constant and unremitting. Formerly the patient had an interval of rest between each pain, but now she is denied the smallest respite, and if an end is not speedily put to this state of things with the forceps, we will find, to our dismay, that eventually the patient is relieved, but the child is stillborn.

For many years my practice in such a case as this has been simply to leave the patient as much to herself as possible during the first stage of labour, and in so far as my memory can reach, I do not remember of a single case in which anything like dangerous symptoms had set in, although this may have been long and protracted. It is not in the first, but in the second stage of labour, where danger is to be apprehended. In any case of tedious labour I seldom interfere until after the completion of the first stage, and never in the second, unless the pulse should have risen to 100 or above it, and other symptoms of exhaustion have begun to manifest themselves. Then, and only then, I deliver with the forceps.

Tedious labour is chiefly to be expected in cases of *primi paræ*, and I am not very sure but that even here the treatment recommended above is the best and most successful that can be adopted. It is the practice which I have followed myself for a number of years, and with unvarying success. In the cases under consideration I have used the forceps forty-six times without a single accident either to mother or child. In two, indeed, the children were stillborn, but in these there was every reason to believe that life

was extinct before the forceps were applied. In one or two cases, on looking back, I have to regret that the forceps were not used, instead of leaving them to the unaided efforts of nature, and where there is reason to believe that puerperal inflammation was the consequence of leaving them too long unassisted.

In my own private practice, which now extends to considerably upwards of four thousand cases, I have never had occasion to use any instrument but the short forceps, and with these hitherto I have not experienced any very serious difficulty. I think it may be laid down as a general rule, that the more "meddlesome" the "midwifery," the less successful will be the practice. In some books it is stated, that in those cases where the os uteri remains long rigid and undilated, gentle attempts should be made to effect artificial dilatation. Dr. Burns says, "It is a good general rule, to effect the dilatation of the os uteri within ten or twelve hours at the farthest from the commencement of regular labour." This I have but seldom attempted, and can scarcely believe that it would always be safe. From long observation I am satisfied that the dilatation of the os uteri depends very much on the kind of labour which is established at the outset. If the labour is natural, the dilatation will offer but little impediment; but if the pains are unnatural, or proceed chiefly from the circular fibres of the uterus, then the dilatation must necessarily proceed very slowly. If this statement is correct, it becomes obvious that any attempt at dilatation, even though partially successful, if it did not at the same time change the action of the uterus, could not prove of any material service in advancing the progress of the labour. I am ready to admit that, in some instances, gentle attempts at dilatation may have done good, not so much, however, from the fact of the success of these attempts in effecting this dilatation, as from the reflex influence which these attempts have exerted on the uterus. By these means the action of the uterus is sometimes considerably improved, and the labour terminated in a shorter space of time than would otherwise have been the case. But it must not be forgotten that this influence is more frequently productive of injurious than it is of beneficial consequences. I have already stated my opinion that, as a general rule, the first stage of labour should not be interfered with, and therefore feel inclined to regard these attempts not only as premature, but as decidedly unsafe.

When labour has advanced to the second stage, if interference seems necessary at all, I have often found that something may be done by exciting what may be called a reflex influence on the uterus. Every one engaged in a practice of this kind must have observed, that when the head has fairly descended into the vagina, and begun to rest on the perinæum, the character of the pains becomes entirely changed. A different set of powers come into operation, and the pains become propulsive. Some of the older writers supposed that this change was effected by a sympathetic

influence ; but I am very much disposed to believe that it arises from the stimulus which is now given to a different class of nerves. I have seen this view nowhere so well described as in the lectures of Dr. Tyler Smith, already referred to. He says, "We can now review the order of the nervi-motor actions of labour, the series of excitor surfaces involved, the one after the other, and the regular succession of stimulus and contraction, in the different stages of the process. First, in the order of events, there is the excitation of the ovarian nerves, followed by the equable and continuous contractions of the uterus. Then there is the pressure of the foetal head, as yet defended by the liquor amnii, upon the os uteri, and the consequent excitement of the orificial nerves, with the answering and intermittent contractions of the uterus. In the next place, the vaginal excitor nerves are irritated by the pressure of the now advancing and undefended head, or presenting part of the foetus, an irritation which calls forth the respiratory action of labour, in addition to the uterine contractions. Then we have the excitation of the nerves of the ostium, vagina, and the remarkable modifications of motor action thus produced."

The regular succession of physiological phenomena which is here presented to our view in the parturient process is well worthy of attentive consideration. It affords a more satisfactory explanation of many circumstances attendant on labour than any which I have hitherto observed. Take, for example, the premature rupture of the membranes. This is almost always followed by a lingering and tedious labour. The escape of the liquor amnii allows the head at once to rest on the os uteri. The orificial nerves being thus prematurely stimulated, the balance of power is disturbed, discordant and irregular action is produced, and, as a necessary consequence, the process extended greatly beyond the ordinary period. If this statement is correct, then every forcible attempt at dilating the os uteri is likely to be followed by the same irregularity of action. It is from a conviction of the truth of this that I have long since abandoned the practice, except under very peculiar circumstances. The plan which I am now in the habit of following is simply this, to interfere as little as possible during the first stage. When the second stage has begun, and little appearance of the progress being satisfactory, I sometimes endeavour to substitute an artificial stimulus to the nerves of the vagina, for that which is naturally produced by the head of the foetus being once fairly lodged there. This is safely and easily done by placing the finger in the vagina, as in an ordinary examination, and during a pain, making gentle pressure downwards in the direction of the outlet of the pelvis. This can be repeated for a time at every successive pain, or only occasionally, as the progress of the case may appear to indicate. In very many instances I have found this to be a most valuable remedy, being followed, as it usually is in a short time, with such an

amount of reflex influence, as speedily and entirely to change the action of the uterus. The pains become expulsive, and the labour is terminated in a much shorter space of time than probably would have been the case if it had been left to the unassisted efforts of nature. I have no intention whatever of recommending this measure as a specific for every case of lingering labour. Like every other remedy, however valuable it may be, it has certain and defined limits, within which it will be found extremely useful, but beyond which it may be found of no avail. Where the action of the uterus is already sufficiently strong, where the pains are what is called grinding, and where at every successive pain the body of the child seems firmly embraced by the circular fibres of the uterus, instead of being propelled downward by the action of the longitudinal ones, in such a case as this the plan proposed will probably not succeed. It seems more applicable to those cases where there is a want of efficient action, rather than to those where that action has become perverted and irregular. It is only in cases of this latter description, that is, of inefficient action, in which *secale cornutum* can be used with safety or advantage. This remedy I have very seldom used, ever since I was led to the adoption of the measure under description. The ergot, however, will occasionally succeed when this method could not very properly be put into practice. I lately attended a patient whose labour on former occasions had been uniformly slow and protracted. In the present instance the pains were not only few and far between, but short in duration, and everything wore the aspect of a tardy accomplishment of the process. The os uteri was dilated to the size of a crown, the membranes were unruptured, and nothing seemed to stand in the way of a speedy termination to the labour, but the paucity and inefficiency of the pains. Deeming this a case for the legitimate exhibition of ergot, a dose was very soon administered. In less than half an hour, the distance of twenty minutes between each pain began rapidly to diminish, and in another half hour she was safely delivered. In such a case as this the *secale* may be always safely, and not unfrequently successfully administered. But where the reverse of these circumstances is present, where the pains are frequent and severe, the os uteri but little dilated, and the membranes ruptured, and especially if it is a first confinement, the remedy may indeed be a potent one, but it will be potent only for mischief.

Having now finished what I had to say in reference to the nature and treatment of labour, I shall now refer to a few of the more important cases which occurred.

The application of the forceps, under ordinary circumstances, is not attended with much difficulty. Still, cases will now and then occur, which not only call for much care on the part of the practitioner, but expose the patient to considerable risk of all the dangers usually attendant on an attack of puerperal inflammation.

Whenever an ear can be reached by the finger, or the finger easily passed round between the head of the foetus and the pelvis of the mother, then the application will both be easily made, and the delivery safely effected. But when the head has become impacted and jammed in the pelvis, when the finger cannot be made to reach the ear, or when the face is directed to the pubis, then the difficulty to be overcome will unquestionably be greatly increased. The following cases, taken from my note-book, will better illustrate this than perhaps anything I could advance on the subject:—

Case 1.—On the morning of the 9th December I was asked to visit Mrs. G., aged 22, and who lived in the country, at the distance of two miles. According to the message sent, she had then been in labour for several hours, this being her first confinement. On examination, the os uteri was not at all affected, although the pains were recurring pretty regularly every ten or fifteen minutes. Next day I visited her again, and learned that during the previous day the pains had gone very much off, but that during the night they had become greatly more severe, with an interval of not more than five minutes. Still no progress had been made in the labour. The os uteri was but slightly affected, and the patient was beginning to be somewhat fretful and uneasy. I left her, after prescribing an anodyne. On the evening of the 11th I was sent for again. The os uteri had now become dilated to the size of half-a-crown, its anterior lip being thick and swollen, the pains returning every three or four minutes with considerable severity, and everything presenting the aspect of a tedious and protracted case. For a while, at every recurring pain, I endeavoured gently to dilate the os uteri. This was easily accomplished to some extent, but still the presentation remained high up, and little progress was made. I now tried a plan which I had often found successful, viz., with the finger in the vagina, I made slight pressure downwards during the pains, so as, if possible, to produce a reflex action upon the uterus. This, however, failed also; another anodyne was administered, and the case was left for some hours to nature. During the night I examined her from time to time, but still the progress was slow and unsatisfactory. By eight o'clock on the morning of the 12th I proceeded to deliver her with the forceps, the liquor amnii having been discharged about two hours before. The head still remained too high up for the ear to be reached with the finger, and the os uteri had not yet become fully dilated. The patient was restless, fretful, and alarmed. With some difficulty I got the blades locked and properly secured with tape. Gently, and along with the pains, I began to pull the head downwards. Finding that little advance was made, the force was gradually increased. When this had become considerable, the blades lost their hold, and before I succeeded in bringing down the head, they had to be readjusted several times. At last,

the difficulty yielded to the force applied, much more suddenly and unexpectedly than usual, so that I had not time sufficiently to guard the perinæum. The head being thus delivered as it were by a jerk, I felt that the fourchette was ruptured. Immediately after the placenta came away, I carefully examined the parts, and found not only that the perinæum had been ruptured, but also about half an inch of the septum between the rectum and vagina. This I carefully closed and secured with three stitches. The face of the child was directed to the pubis. When the delivery was accomplished, the pulse had risen to 110. At my visit next day the pulse had fallen to 90, and the patient felt exceedingly well indeed. During the succeeding night, in consequence of some exposure, she had a rigor. This was soon followed by heat of skin, thirst, headache, and severe pain over the uterus. These yielded in a few days to a single bleeding from the arm, followed by leeching, stuping, and eventually by a blister, accompanied of course with proper internal treatment. Both mother and child did well. On the third day after the application of the stitches, I examined the perinæum, and found that firm adhesion had taken place. Not more than the usual amount of tenderness was complained of in this situation.

Case 2.—At 10 P.M. of the 12th August I visited Mrs. D. The os uteri was then fully dilated, the head presenting naturally, and the membranes entire, but the presentation still remained nearly as high as could be well reached with the finger. The pains were regular and severe, and coming on at intervals of not more than five minutes. For three hours matters continued very much as now described, with the exception of the head having come somewhat more within reach. As the case was now beginning to assume rather a serious aspect, and the patient to be urgently desirous of being relieved, I began to prepare for the application of the forceps. The pulse had risen to 110, the skin was hot, the thirst urgent, the patient drenched with perspiration, and her distress altogether constant and severe. I could not reach the ear with the finger in consequence of the head being firmly impacted in the pelvis. With some difficulty the first blade was pushed behind the pubis in the usual direction, but before the other could be got fairly introduced, and the two locked, the first one had been shifted from its place. First one blade and then another was withdrawn and reintroduced, but still the same difficulty was experienced. At length the forceps were got locked, but I had no sooner begun to use them, than the same blade again slipped from its place, and became firmly fixed in a lateral position. I now withdrew the other blade, and with the one which had become fixed endeavoured to move the head downwards. So securely had this blade become fixed, that I was enabled to exercise considerable power over the head, and in about fifteen minutes fairly to deliver it. This blade had been fixed over the left eye,

where it had produced some redness and abrasion of the skin. For several days the eyelid remained swelled and nearly closed, but in about a week all traces of the injury had disappeared. The mother recovered without a single unfavourable symptom. This was her eighth confinement, and the seventh in which she had been delivered with the forceps.

In the two cases just narrated, more difficulty was experienced in using the forceps than I had ever met with before. In the great majority of instances they were easily applied, and the delivery as easily accomplished in fifteen or twenty minutes. The following case will furnish some idea of the description of labour in which the use of instruments becomes imperatively required:—

Case 3.—At 8 P.M. of the 3d December, the liquor amnii was discharged in the case of Mrs. N. without pain. About midnight pains came on, and I saw her about an hour afterwards. On examination, the os uteri was but little affected and still remained high up. From this period the pains continued to recur regularly every five or six minutes, but were productive of but little effect. At 3 P.M. of the 4th, the os uteri had become dilated to the size of a crown. The pains were still ineffective, and occasionally followed with vomiting. On examination during a pain, the os externum felt contracted and apparently drawn upward. About 6 P.M. the head began to rest on the perinæum, though at this time it had not fairly escaped from the embrace of the uterus. This being a first confinement, and the progress made from hour to hour being not only very small, but the hopes of a natural termination to the labour being very distant, I proposed to use the forceps. This I was induced the more especially to do from two separate and distinct considerations. In the first place, the membranes having been ruptured before labour commenced, there was reason to believe that the child not being protected by the liquor amnii, would perish from the severe but ineffective action of the uterus. In the second place, the pulse having risen to 108, with considerable thirst, and other signs of exhaustion, long experience had convinced me that to delay for any length of time would probably expose the mother to all the perils of puerperal inflammation. The forceps were applied without much difficulty, delivery slowly and easily effected within half an hour, and without almost any complaint on the part of the patient. For some time after birth the child made but slow and feeble attempts at respiration, but by perseverance in the use of means it was at last fully established. The mother shortly after fell asleep, and enjoyed for a time sound and refreshing slumber. At my visit next day the pulse had come down to 84, and everything afterwards, both with mother and child, continued to progress towards recovery in the most satisfactory manner.

The number of breech presentations was eighteen. Five of the children were still-born, and thirteen were alive. No casualty

occurred to any of the mothers, nor was instrumental aid required in any of the cases, except one. In this instance the patient was about forty years of age, and it was her first confinement. After being ill for forty-eight hours, a blunt hook was inserted over one of the thighs, and by this means delivery was accomplished. The child was still-born, but the mother made a good recovery.

In some of the cases, considerable force was necessary, in order to bring down the head. As soon as the arms and shoulders are brought down, which I endeavour to do as quickly as possible, after the delivery of the breech, I proceed at once, and without waiting for a pain, to relieve the head also. A very few minutes, in most instances, is sufficient to destroy the child, so that the greatest expedition is necessary. By placing one of the fingers of the left hand in the mouth of the child, and grasping the shoulders with the right, I usually succeed in a very few minutes in finishing the labour. If foiled in this, I generally take a towel, place it across the shoulders behind, then bring it round to the front, and twist it there. By seizing the towel in front with the right hand, and keeping a finger in the mouth as before, I can command as much additional power as is sufficient to deliver the head.

In twenty-eight cases, the face was found directed to the pubis. In some of these the progress of the labour was but little retarded, in others, though some delay took place, yet the efforts of nature were found competent to overcome the obstacle, and in a few the forceps were required.

Of the six face presentations four were terminated without assistance, and two required the use of the forceps. In five cases the shoulder presented, and the operation of turning was required in all of them. All the children were still-born. The following case proved fatal to the mother:—

Case 4.—On the evening of Wednesday, 22d June, Mrs. F. began to experience what she considered to be the pains of labour. For two hours these became gradually worse, when all at once the liquor amnii was discharged, and the pains immediately ceased. From this period till the evening of Saturday the 25th, she remained comparatively easy, suffering only occasionally from slight pains. The pains now began to recur with greater severity, and at intervals of ten minutes. I was sent for at nine o'clock P.M., and on examination found the os uteri very rigid and dilated only to the size of a shilling; on pressing firmly against the part presenting, I was satisfied that the presentation was a natural one. In this, however, I afterwards found that I was mistaken. During the next three hours, the os uteri had become dilated to the size of a dollar, and now, for the first time, I discovered that the presentation was not a natural one, but probably a breech one, as the finger passed into a sulcus, apparently formed by the two thighs of the child. In the course of a short time afterwards, and during the presence of a pain, an arm slipped down into the vagina, with the

palm of the hand directed to the back of the mother. My decision was instantly taken to turn the child; but I soon found that this was to be a work of greater difficulty than I had ever experienced before. On endeavouring to carry my hand onwards between the body of the child and the uterus, the progress of the hand was completely arrested in consequence of the body being firmly grasped by the uterus. By cautious perseverance, I succeeded in passing the hand so far onwards as to be able to touch one of the thighs with the fingers. But by this time the patient had become exceedingly restless, and my hand so much benumbed, as to induce me to desist, and ask for the assistance of a medical friend. In consultation, we agreed to put the patient under the influence of chloroform, and make another effort to turn. After considerable exertion, my friend succeeded in bringing a foot into the vagina. But the body of the child was so firmly embraced, that all the power with which the command of the foot invested us, after much patient exertion, did not enable us to bring down the body in any sensible degree. At last, a small loop of sewing cotton was thrown around the great toe. By this means the foot was kept steady, and a stronger loop was slipped along this, and eventually fastened round the ankle. Strong traction was now made, and the body began gradually to yield. But just when we expected fully to succeed, the knee joint gave way, and we were again obliged to desist. Fortunately, however, this movement had brought the other foot within reach, and by the assistance of it the labour was speedily brought to a termination. The patient now looked pale and exhausted, the pulse so quick and feeble as not to be counted, and the hands and feet were cold. It was perfectly evident that the case had now assumed a very serious aspect. Heat was applied to the extremities, and wine and other stimulants were administered internally. This treatment was assiduously continued during the day, and by the evening she had rallied very considerably. The wine, with ammonia and laudanum, which had been given during the day, were directed to be continued during the night. At my morning visit, reaction seemed fairly to have set in, and the stimulants were discontinued. The skin was warm, the tongue dry, and the pulse was full and beating 126. On a minute and careful examination of the abdomen, the uterus was felt firmly contracted, and not very tender on pressure, but the belly was more tumid than usual, and very painful to the touch. At the same time there was a tendency to vomit whenever anything was swallowed, and the lochial discharge was in a great measure suppressed. In order to overcome the inflammation which had evidently set in, a dozen of leeches were applied to the abdomen, and a pill, consisting of calomel and opium, was directed to be taken every six hours. The leeches were applied, and gave considerable relief; but in the evening symptoms of sinking again recurred. The face, hands, and feet were cold to the touch, and

restlessness and anxiety became more strikingly manifest. Stimulants were again had recourse to, but without apparent benefit. A very restless night was passed, and in the morning she appeared much worse, and died at three P.M.

Remarks.—This patient had confined herself almost entirely to her bed from the Wednesday night up to the period when I was sent for on the Saturday evening, all the while suffering from occasional pains. These, however, were not of a kind sufficiently severe to induce her to send for medical assistance. The length of time that had thus elapsed, and the pains periodically experienced, together with the rupture of the membranes at so early a period, all combined, no doubt, to produce that firm contraction of the uterus which opposed so powerful an obstacle to the turning of the child. This contraction was not even sensibly diminished when the patient was under the full influence of chloroform. Never before having met with a case where turning was not effected independently of the use of opium or other auxiliary medicines, I cannot tell whether the influence of these would not have been greater than that of chloroform in producing a temporary suspension of the action of the uterus. In this case, at least, chloroform was of little or no use at all, except in so far as it produced a measure of insensibility to pain. In similar circumstances and with the same difficulties to contend, I would certainly rather be inclined to trust, in the first place, to a full dose of opium, and subsequently to evisceration. The injury inflicted in turning, even under the most cautious management, when the liquor amnii has long escaped, and the uterus has had time firmly to contract on the child, seems, in many instances, to be so great as to lead to fatal consequences. This of itself ought to be sufficient to induce us to pause, and, if possible, to adopt a less hazardous, though, it may be, a less expeditious method of delivery. This being the first time I had attended this patient, I was of course unaware of her previous history. I have since been informed that her first accouchement was of twins, and that she was long and severely ill. From this period she never enjoyed good health, having constantly suffered from a profuse leucorrheal discharge. The present was her fourth confinement.

The number of placental presentations was five, and as more than ordinary interest is attached to every case of this kind, I shall transcribe two or three as I find them stated in my note-book.

Case 5.—I was sent for to visit Mrs. C., resident four miles from town, on the 11th October, at four P.M., and who, I was informed, had experienced repeated attacks of hæmorrhage during the preceding two months. On arriving at her house, I found that she had already fainted several times, and that, with every successive pain, the flooding was severe. Her skin was cold to the touch, the pulse rapid and scarcely perceptible at the wrist. On examination, the placenta was felt protruding through the soft

and yielding os uteri. Without loss of time, the hand was introduced, the child turned, and delivered still-born. Immediately afterwards, the placenta came away, almost without any farther loss of blood. All this was accomplished in less than fifteen minutes after I entered the house. I remained with the patient for an hour afterwards, and during this time there was no tendency to syncope, although the pulse still remained extremely weak and beating upwards of 120. After giving suitable instructions, I left, requesting that I should be sent for, if she became worse during the night. Next day I found her weak, but without any other complaint. The pulse was somewhat stronger, though nearly as rapid as before. From this period she continued slowly to improve, up to the eighth day, when I was again summoned in great haste. I found that, while sitting up in bed, taking breakfast, she had fainted. She had been immediately placed in the horizontal position, and had the pillows removed from under her head. This, and the administration of some cordials, soon restored her to consciousness. From this time she continued to improve, till the beginning of the following week. She then began to talk incoherently, and to show decided indications of an attack of puerperal mania. Her head was shaved, and kept cool with evaporating lotions, and some purgative medicine was administered. As soon as the bowels had been effectually cleared, an opiate draught was directed to be given, and repeated in two hours, if sleep did not follow. She had three hours' sleep during the night, and in the morning was more sensible, and appeared in every respect to be better. On the following day she was much worse, being more violent and very impatient of restraint. A mixture, containing tartrate of antimony, camphor mixture, and laudanum, was ordered to be taken every two hours, till sleep came on. The use of this brought on frequent vomiting and quietness, as long as its sickening effects continued. So soon, however, as the nausea ceased, the violence became as great as before. At my call next day, I found her expatiating, with great volubility, on some imaginary wrongs. Her head was now brought over the edge of the bed, and the cold douche applied. In about an hour after this she fell asleep, and continued to do so for three successive hours. On awakening again, her violence was not so extreme. The cold douche was several times tried afterwards, but ultimately ceased to have much effect. By this time her pulse had gradually come down to 84, her tongue was clean, her skin cool, and her appetite pretty good. Medicine of every kind was given up, nourishing diet and kind and gentle treatment recommended. From this period she began to improve, and on calling to-day (19th October) I found her sitting by the fire, calm and collected, and able to converse in a perfectly distinct and rational manner. Her features were still very considerably collapsed, and she looked pale and emaciated. I understood from her husband, that occa-

sionally she still returned to some of her old themes, though now easily diverted into some other train of conversation.

Case 6.—The following case proved fatal:—At eight A.M. of the 1st December, I was sent for to visit Mrs. A., who was said to be advanced to her eighth month of pregnancy. About three weeks previous to this period, she had become affected with a severe cough, which often prevented her from enjoying rest during the night. About an hour before my visit, and while suffering from a severe paroxysm of coughing, a sudden discharge of blood took place from the vagina. When I arrived, I found that the flooding still continued, and that occasional pains were felt in the back. When the large coagula which plugged the vagina had been cleared away, the os uteri was felt high up, and completely closed. In these circumstances, I followed the advice given by Burns, when he says, "If the os uteri be firm and close in a first attack, we ought to use the plug, which will restrain the hæmorrhage, and insure the present safety of the patient." This measure arrested the hæmorrhage during the whole day. Next morning, about eight o'clock, I was again called. On inquiry, I found that the plug had been removed during the night, and that the flooding had been immediately renewed. Through some mistake, I was unfortunately not sent for for some hours afterwards. Though the flooding had evidently been great, yet the patient had shown no tendency to syncope, but looked pale and exsanguine, and the pulse had risen to 150. The os uteri was now found dilated to the size of half-a-crown, and the placenta entirely implanted over it. This being ascertained, the turning and delivery of the child was the work of a very few minutes, and this was effected with very little additional loss of blood. The patient expressed herself as comfortable, and with the exception of the rapidity of the pulse, everything seemed to wear a favourable aspect. There was no jactitation, no tendency to syncope, and nothing to excite immediate alarm, but the extent of the flooding, which had evidently been great. The placenta was brought away very soon after the birth of the child, and the uterus above the pubis was felt to be firm and well contracted. A glass of wine was given, and this was succeeded by a dose of morphia. During the day she continued in a pretty comfortable state, and was able to take some light nourishment. By the morning of the third, reaction had taken place, the skin had become hot, the breathing hurried, the thirst urgent, the tongue dry, and the pulse had risen to 160. A diaphoretic and sedative mixture was now prescribed. By the evening she was slightly delirious, restless, and uneasy. The uterus from the beginning was felt firmly contracted, and the abdomen was soft, without tumidity, or pain even on firm pressure. The lochial discharge was moderate from the first. On the morning of the fourth, the heat of the skin was reduced to a moderate temperature, but the pulse was not improved. The condition of the patient was now perilous

in the extreme, and every appliance which science or experience could suggest was unremittingly and perseveringly applied. All, however, was of no avail, and she died on the morning of the fifth, exactly three days after her delivery.

In six cases labour was complicated with convulsions. Five of the children were still-born, but the whole of the mothers recovered. The two following were the most severe:—

Case 7.—Mrs. M'F., aged 22, began to experience slight pains about 6 P.M. of the 24th March. I was hurriedly sent for at 8 P.M. On arriving at the patient's house, I found her struggling under a strong convulsion, which lasted about five minutes. This was the third she had taken within the last half-hour. She was now in a state of deep coma. As soon as the fit was over, I opened a vein, and took away twenty ounces of blood from her arm. Her hair was directed to be cut, and evaporating lotions to be constantly applied to the head. On examination, the os uteri was found to be but slightly dilated. The next fit recurred at 3 A.M. of the 25th. During the next three hours the fits returned four different times. Shortly after 6 A.M. the child was born alive, by the natural efforts of the uterus. Her head was now shaved, and the cold applications continued. Before 11 A.M. the fits had recurred six times, at about a regular distance of an hour between each. Twenty ounces of blood were again taken from the arm, which reduced her to a state of syncope. On recovering from this, a starch enema, with forty drops of laudanum, was administered. From this period the attacks entirely ceased, but she remained utterly unconscious for other twenty-four hours. At the end of this time she began to answer questions by "Yes," or "No." It was two days after this, however, before she could realize her own position, or be made to understand that her child was born. Convalescence soon became established, and with the assistance of a keen appetite, at the end of fourteen days she seemed again to be quite well.

The notes of the following case have been so briefly recorded as to render it little more than intelligible to the general reader:—

Case 8.—M. G., unmarried and aged 19, was seized with convulsions on the morning of the 16th June. An examination per vaginam discovered the os uteri soft and dilatable, and open to the size of a sixpence. She was immediately bled to the extent of sixteen ounces, and had an enema administered, which acted well. The head was shaved and cold lotions applied. Notwithstanding of this, the fit continued for a time to return every hour. Before midnight she had been thrice bled, and had a blister applied to the nape of the neck. On the afternoon of the 17th she appeared to experience pains, which had not been observed before. At 5 P.M. I found the head resting on the perinæum, applied the forceps, and effected delivery of a still-born child. At 10 P.M. the coma, which had continued from the first, still remained. At my morning visit on the 18th consciousness had begun to return,

and the convulsions had ceased after the delivery of the child. After this the patient began rapidly to recover, and in the course of a few days seemed to be comparatively well. In all, she had about twenty fits, and for fifty-two hours was constantly and completely comatose.

The only other cases to which I deem it necessary to refer, are those where labour was complicated with an ovarian tumour, and this occurred only twice, both instances happening to the same individual.

Case 9.—I was sent for to visit Mrs. P., in consequence of some slight pains which she considered as the commencement of labour. This occurred six weeks before her actual confinement. On examination I could discover no os uteri. The finger, when directed up along the sacrum, could not find its way between it and the uterine tumour. The posterior wall of the vagina seemed to stretch across the presenting part, thereby rendering it evident that the uterus was fairly retroverted, and the os lying too far up behind the pubis to be easily felt. Even at this early period I thought I could discover the sulcus between the nates of the child, the wall of the uterus being apparently closely stretched over them. In consequence of a return of the pains, I was requested to visit her again on the 7th November. Another examination, carefully made, failed to detect the os uteri. The pains continued trifling during the whole day. On the 8th, I thought I could reach the os uteri high up behind the pubis. The pains continued throughout the day, but without any perceptible advance in the labour having taken place. On the evening of the 9th I was summoned in great haste, and now found a foot protruding through the vulva. Delivery was speedily accomplished, but the child was still-born. The placenta soon followed. With the hand placed on the abdomen, a double tumour was now easily felt. The largest of these seemed to have its origin in the right iliac region, and stretched across to the left hypochondriac, and was evidently ovarian. The other was the uterus, immediately above the pubis, and in its normal position. This state of matters at once explained all the mystery which had hitherto hung over the case. She continued to progress in a very satisfactory way for the first three days, during which the pulse gradually came down from 120 to 80. On the beginning of the fourth day she seemed a little flighty, sitting up suddenly in bed, talking with great animation, and occasionally somewhat incoherently. There was now a slight flush on the one cheek, but the skin was cool, and the pulse was not quickened. Late in the evening she had an attack of convulsions. She was immediately bled from the arm to the extent of sixteen ounces, had her head shaved, and cold lotions assiduously applied to the head. During the night she had repeated attacks of the same kind. Next morning, the bowels having been freely moved by an enema, the bleeding was repeated. After this period the convulsions did

not recur, and convalescence soon became established. Two weeks after delivery she seemed fairly to have recovered, the ovarian tumour remaining in the same condition as before described.

Case 10.—The case which is now to be described is that of the same individual who formed the subject of the last note, at her next confinement, exactly twenty-one months after the first. At 6 A.M. of the 11th August, 1851, I was called upon to visit Mrs. P., who for several hours had begun to experience what she considered to be the pains of labour. These, on my arrival, were found to be recurring pretty regularly every four or five minutes. On examination per vaginam, no trace of the os uteri could be felt. Being satisfied that the ovarian tumour was the part presenting, I introduced the whole hand into the vagina, and with the points of the fingers endeavoured to push the tumour fairly up into the abdomen. This was accomplished with more ease than I had apprehended, and immediately the head descended and occupied the place which the tumour had done only a minute before. Labour proceeded as before, and I fully expected that in the course of half an hour it would have been terminated. In this, however, I was disappointed, for when the head had descended so low as to rest on the perinæum, no farther progress was made for the next hour. The forceps were then applied, and delivery easily effected. The child when born was very weak, making short inspirations at long intervals, but after a little care and attention for ten or fifteen minutes, respiration was at last fully established. Before applying the binder, I made a careful examination of the abdomen, and found the large ovarian tumour occupying the whole right iliac and lumbar regions, and the uterus displaced and filling the same regions on the opposite side. On the sixth day after delivery I made another examination, and found the uterus greatly diminished in size, and occupying its normal position above the pubis, while the tumour continued located as before. The patient made an excellent recovery, and in about the usual time was able to attend to her household duties. She has not been pregnant since.

Only once, during the last fifteen years, has puerperal fever appeared here in the form of an epidemic. This was in the end of 1848, and beginning of 1849, a period during which I was incapacitated for professional duty on account of a long-continued illness, and, consequently, had little opportunity of witnessing the progress of the disease. For some weeks previous to the outbreak of this dread malady, erysipelas appeared in something of a new form, assuming at once the characteristics both of an epidemic and a contagious complaint. In one family which I attended, a young man was the first affected with it. After a smart illness he recovered, and went into the country. The mother soon afterwards was seized, and in two or three days more, the father and daughter (constituting the whole of the family) became almost simultaneously affected with the same disease. None of the three

recovered. In some instances, the first manifestations of the complaint were observed in the fauces. From this it sometimes travelled down the floor of the nostrils, and speedily overspread the face. Cases of this description were far from being uncommon. Three or four weeks after its existence had become distinctly marked, the first cases of puerperal fever occurred. Whether there was really any natural alliance between the two complaints, I leave for others to determine. For my own part, I have a very strong impression that there was. The analogy between the two may at least be traced thus far. Both seemed to be produced by a subtle poison, with which the atmosphere appeared to be impregnated. In the one case, while erysipelatous inflammation appeared on the cutaneous surface, in the other, it fixed its local habitation in the peritonæum. This deadly disease appeared in one of its most deadly forms, and, in quick succession, proved fatal to many of the healthiest females. The boldest and the best of our practitioners were panic-struck, and, afraid lest they themselves might be the means of carrying the contagion from patient to patient, in some cases sought to escape from the responsibility by refusing attendance altogether. I saw only two of these cases. The one was comparatively mild, but the other was very severe. In the latter instance, the belly soon became tympanitic, and as large as it was before delivery; the patient lay constantly on her back, the pulse was exceedingly rapid, the delirium constant and unremitting, and the *tout ensemble* of the case altogether unpromising. Fortunately, however, both patients completely recovered.

In the number of the *Glasgow Medical Journal* for July, 1853, Dr. Pagan, in his "Contributions to Midwifery Statistics and Practice," observes—"I regret that I am not able to state the relative number of long and short forceps operations, an accurate distinction between these operations not having been kept in the registers of the hospital. I may state, however, from memory, that a considerable number of the cases were long forceps operations, where the bulk of the head of the child was above the abdominal aperture of the pelvis, or where no part of the head had been engaged in the brim. I regard the long forceps, in cautious hands, as a most valuable instrument; though, in rash and unskilful ones, it is no doubt a very formidable weapon."

In the whole course of my practice, extending over a period of more than twenty years, I have never either had occasion to employ the long forceps, or seen a case in which I could suppose their use was at all desirable. I think it may, therefore, not unfairly be presumed, that the long forceps will ere long be numbered among the things that were.

In conclusion, I may be permitted to state, that among the first fifteen patients I attended after this report had been closed, an unusual number of abnormal cases occurred. In one instance,

the funis umbilicalis presented along with the head, pulsation having ceased before I saw the patient, the child being still-born. In another, the shoulder presented; the child was turned; both mother and child did well. In a third, the placenta presented, the child was turned, and delivered still-born; but the mother has recovered pretty well, though somewhat slowly, from the loss of blood. Twice the forceps were used, both mothers and children having done well.

II. *Observations on some of the Means recently proposed for the Prevention of Pitting in Small-Pox.* By JAMES WALLACE, A.M., M.D., Fellow of the Faculty of Physicians and Surgeons, Glasgow, one of the Medical Attendants to the Greenock Infirmary, and Surgeon to the Greenock Poor-house.

IN 1849, when acting as clinical clerk in the Glasgow Royal Infirmary, I painted with collodion—as originally suggested by Dr. Ranking, in the *Lancet* for January of that year—one-half of the face of a patient labouring under semi-confuent small-pox, and was so much struck with its efficacy in mitigating disfigurement, that, on taking charge of the Greenock Infirmary, I determined on giving it a farther trial. I employed it, accordingly, in eleven cases, coming under my care in the spring and winter of 1852. Of these, five were confluent, two semi-confuent, three with the eruption discrete and moderately copious, and one with the eruption discrete, but very abundant. In one, the collodion was applied on the first day of the eruption; in another, on the second; in five, on the third; and in four, on the fourth. In all of them it was used some days previous to the stage of maturation, and the result in general was satisfactory, the pitting having been prevented to a considerable extent. But during the progress of the disease, the application was attended with no small inconvenience; for, when tumefaction set in, the collodion, from its want of elasticity, kept the parts in such a state of pain, heat and tension, that several of the patients were with difficulty persuaded to let it remain on. For the same reason, also, it cracked so frequently, that gaps, which were formed here and there, had to be filled up by a reapplication of the solution which, on subsidence of the swelling, became still farther necessary, because of the less prominent parts of the face being separated from the artificial pellicle. Nor were these disadvantages compensated for by anything like what has been called *abortion* of the pustules, for the progress of the eruption was just as if the face had been without any protection whatever, the only beneficial result having been mitigation of the pitting. Now, as this was the principal object in view, it became evident that the same effect was as likely to be produced,

and with much less uneasiness to the patient, by having recourse to the application at a later stage of the disease; and as the efficacy of such a covering could depend, from what was observed, only on the exclusion of atmospheric air from the pustules when fully developed, and on its allowing cicatrization to advance in a way analogous to what is termed the modelling process,* the most suitable period seemed to be that immediately before complete maturation, when there is usually found a greater or less amount of swelling. By this method the face, on any subsequent increase in size, would be subject to considerably less constriction than by that first followed; and, on falling to its normal dimensions, would have the coating adherent to a much greater extent. But there would still be a great drawback in the inelasticity of the collodion, as well as in its liability to crack. I therefore gave up the use of that substance altogether, and had recourse to a solution of gutta percha in chloroform,† which I have now employed in twenty cases;‡ four being confluent, seven semi-confluent, seven with the eruption discrete and moderate, and two with the eruption discrete but copious. In the whole of them it was painted on *immediately before complete maturation*, which occurred in three on the fifth day of the eruption, in three on the sixth, in ten on the seventh, in two on the eighth, in one on the ninth, and in one on the tenth. Under this plan, the increase that took place in the swelling was found to be in general moderate, and not such as to prevent the gutta percha yielding readily to it, nor to cause that feeling of heat and tension, which was so much complained of by the patients subjected to the collodion application; and when the tumefaction subsided, the mask was found to adhere intimately to all the subjacent parts, except at the angles of the mouth, where, from the frequent motion of the lips, it invariably became detached. But this was easily remedied, either by touching lightly with a camel-hair pencil dipped in chloroform, the loose portion of the covering, which in that way became softened and collapsed upon the skin; or, which is better, by painting anew the exposed part of the face, without disturbing the separated pellicle at all. Farther than this no interference was necessary, the whole coating having been allowed to remain on till desquamation spontaneously occurred, when the face was found, in all the cases, to be in a very satisfactory condition. The ultimate result, too, was exceedingly favour-

* Miller's Principles of Surgery, p. 199.

† This seems to have been first used in cases of small-pox by Dr. Stokes of Dublin. Vide paper in Dublin Quarterly Journal of Medical Science for August, 1852, by the late Dr. Graves. According to the latter observer, it should not be employed till the eruption is *fully matured*, or even begins to exhibit the first appearance of collapse; but this stage is highly objectionable, in consequence of the cuticular covering of the pustules being then so much thinned, as to break readily while the solution is being applied.

‡ The whole of these, as well as those treated with collodion, are exclusive of fatal cases.

able, scarcely any pitting having been noticed when the patients were dismissed, except in two or three instances, in which, however, it was moderate, and in which, but for the covering, there would, I am convinced, have been frightful disfiguration. At the same time it ought to be stated, that those cases which I had an opportunity of seeing, some months after their discharge, presented the marks much more distinctly than when under observation in the hospital, but still so modified, as to show that they had been very materially benefited by the means resorted to.

From this it will be seen, that the gutta percha, like the collodion, though to a much greater degree, succeeded only in mitigating, and not entirely preventing, pitting. Hence, some may be apt to conclude that its efficacy was much inferior to that of other applications, which have of late years been brought under the notice of the profession. But in estimating the comparative merits of these, regard should be had to the appearance of the patients, as exhibited *long after* they had been under treatment, as well as on their leaving the hands of the physician. Now, there is strong reason to suspect, that inattention to this has led the advocates of these *abortives*, or *ectrotics*, as they call them, to overrate their value very materially, the history of their cases seeming to go no farther than the date of their discharge, without any allowance being made for the absorption and contraction which invariably take place, to a greater or less extent, in a spot which has been the seat of a small-pox pustule. The face, undoubtedly, may appear, when the patients are fit for dismissal, smooth, and free from all trace of pitting; but after some time depressions will, to a certainty, ensue. At all events, so far as my experience goes, marking as deep, and in some cases much deeper than that noticed after treatment with gutta percha or collodion, has followed the employment of some of the substances referred to. Of these none has been more highly recommended than the unguentum hydrargyri, thickened with starch, which was first proposed by M. Briquet of Paris, and afterwards brought prominently before the profession in this country by Professor Bennett of Edinburgh.* The advantages attending its use were stated to be, abortion of the pustules with prevention of swelling and pain, in addition to almost complete freedom from pitting, in consequence of which, and more especially as I had found the collodion to fail as an ectrotic, I was readily induced to give it a trial before having recourse to the gutta percha. I employed it, accordingly, in three cases, one of which had the disease in the confluent, and two in the discrete form. In the first, it was applied on the fourth day of the eruption, which was then moderate, and little more than papular; but two days afterwards it became more profuse, and accompanied with pain, heat, and tumefaction, all of which increased to a great degree. At length the pustules

* Clinical Lectures, p. 85.

ran into one another on the face and extremities, and the mouth and fauces, which were closely studded with them, swelled to such an extent, as almost entirely to prevent deglutition, the larynx ultimately becoming involved, and death closing the scene, fifteen days from the appearance of the eruption, and eleven from the commencement of the treatment.

So far, then, as this case was concerned, the ointment was not at all successful, either in checking the development of the pustules or in alleviating the swelling and pain. Nor was its power in these respects more than problematical in the other two, for although it was applied in both when the eruption was discrete, scanty, and papular, there was ultimately a considerable crop of pustules, the progress of which was in no way different from that exhibited on the rest of the body. The amount of swelling, heat, and pain, however, was moderate, but, at the same time, no less than what might naturally be expected in instances of the disease presented in the modified form, the cicatrices besides being found, when the patients were ready for dismissal, as deep as those observed after the employment of collodion. There was, no doubt, entire freedom from that feeling of tension which was so much complained of by those subjected to the latter application; but this advantage was more than counterbalanced in the two cases which advanced to a favourable termination, by the occurrence of mercurialism, which was unequivocally manifested by swelling and ulceration of the gums and mucous lining of the cheeks and lips, as well as by salivation and the characteristic fetor of the breath. The urine, moreover, became albuminous, but whether this was caused by the original disease, or by the introduction of the mineral into the system, could not be with certainty determined. As it took place, however, simultaneously with the pyalism, and as mercury is known sometimes to be followed by such a condition, there was just as much reason for believing that it was the effect of this, as that it was an instance of that species of albuminuria (*temporary*),* which not unfrequently arises during the course of fevers and some acute diseases. But leaving the state of the urine out of the question, the liability to mercurialism alone was sufficient to make me entirely abandon the use of the ointment, and I did so the more readily as I found that I was not singular in my experience, a similar accident, about the time my cases were under treatment,† having been met with in the practice of Dr. Paterson of Tiverton, whose paper on the subject induced Professor Bennett himself to discard the application altogether. It then occurred to the latter observer, that as the benefits

* Vide papers by Dr. J. W. Begbie, in *Edinburgh Monthly Journal* for Oct., 1852, and *British and Foreign Med. Chir. Rev.* for July, 1853.

† Mercurialism took place, more recently, in several cases treated in the wards of my colleague, Dr. Spiers, who was thence led to use the mild instead of the strong ointment, but unfortunately with the same result.

‡ *Monthly Journal* for December, 1852.

arising from it might be due more to its allowing cicatrization to advance according to the modelling process, than to its action as an absorbent, a paste sufficiently coherent, and capable of excluding atmospheric air, might answer as well as the mercurial in effectually accomplishing the object desired. He therefore recommended,* after some trials, one composed of three parts of the carbonate and one of the oxide of zinc, made into a proper consistence by means of olive oil; but of this also my experience corresponded in no degree with his, for in two cases in which I was led to employ it, though applied when the eruption was scanty and vesicular, it did not succeed at all as an abortive, the face, as the disease advanced, becoming closely studded with pustules of a full size, and attended in one with severe pain, and in the other with a large amount of swelling, which was, however, in the former not at all considerable. Nor was cicatrization mitigated in any way whatever, deep pits having formed on the nose and forehead, even before the dismissal of the patients, in one of whom, moreover, when seen four months afterwards, the scarring on the rest of the face was so marked as to force the suspicion that a different result did not ensue in the other. There was, therefore, no encouragement to pursue any farther this method of treatment, the inferiority of which to that by gutta percha must at first sight appear strange, when it is considered that both are intended, or supposed to operate on the same principle. But leaving out of view the so-called ectrotic power, it must be evident that a soft paste like this zinc composition will, before drying, be constantly exposed to removal by the bedclothes of the patient, both from his tossing about during sleep, and from the impossibility of keeping him always on his back, so that frequently the pustules over a large surface will be without any protection, and on that account very liable to rupture. The application, of course, can be easily renewed, but still mischief is done in the interval by the free admission of air, which, under the gutta percha, is effectually excluded by a single coating, except, as has been already shown, at the angles of the mouth, where, curiously enough, however, there is seldom much pitting, even when the eruption is presented in an aggravated form. It is extremely probable, besides, that the latter possesses another advantage over the former, in the moderate amount of support which it affords to the whole face; in consequence of which the cicatrices must be more neatly moulded than they would be if protected by a substance allowing the opposite margins of each pustule to separate freely from one another.

But, in addition to these modes of treatment, there is still another of recent introduction, with which also the gutta percha contrasts not less favourably. This was proposed by Dr. Crawford of Montreal, and consists in painting on, once or twice a day, from the time the eruption appears till the pustules are fully matured, a

* Monthly Journal, April, 1854.

strong solution of iodine in alcohol,* the benefits attending it being said to be prevention of the pitting, and, excepting the smart of application, relief to the local uneasiness. In regard to the latter of these, however, it was found, in my hands, not to answer, for in the two cases in which I was induced to give it a trial, it caused a great amount of pain, which was *almost constant*, and not at all warranted by the ultimate result, the marking, in the one which terminated in recovery (the other having died eleven days after admission), being no better than that noticed even after the use of collodion. But independently of this, it labours under a serious drawback, in the necessity of its being employed immediately on the appearance of the eruption. This, it is plain, must confine its application to a comparatively small number of those afflicted with the disease, for it is well known that in the vast majority of instances admitted into hospitals, as well as in many occurring in private practice, the early stage is past before the patients come under treatment. With the gutta percha, however, such a condition is not required, the period most suitable for its use being, as has been already shown, that immediately before complete maturation, so that in very few cases will the opportunity be lost of affording them a safe, easy and efficacious means of materially modifying future disfigurement.

From a review, then, of the foregoing observations, it may be concluded:—

1. That pitting cannot be *entirely prevented* by any of the applications to which reference has been made.
2. That by means of several of them, however, it can be *mitigated* to a very considerable extent.
3. That, with the exception of the gutta percha, they are attended with some disadvantages.
4. That the gutta percha, besides, is the most useful in accomplishing the desired effect. And,
5. That, in order to its success, it should be painted on just before maturation is complete.

III. *Remarks on the Alterative Treatment of "Continued Fevers."*

By JOHN REID, Surgeon.

(Read to the Medico-Chirurgical Society of Glasgow.)

IN a short essay like the present, I have no intention of entering minutely into the very extensive subject of fevers, either physiologically, pathologically, or therapeutically, in reference to the many different species and types, but simply to found upon one broad pathological condition as the *origo mali*, or seat of these diseases; and farther, to recommend a general system of treatment as appli-

* Montreal Medical Chronicle, November, 1853.

cable to those abdominal pathological conditions which always obtain more or less in continued fevers, and which, in short, are the proximate causes.

The deranged state or pathological conditions of the gastro-intestinal mucous membrane are, in the great majority of cases, of typhoid or typhus fevers,* the most important changes to which we have to attend in the treatment of that class of diseases. However, I cannot agree with Broussais in ascribing *gastro-enteritis* (unless that definition be admitted as embracing different pathological conditions) to be the general proximate cause of all fevers; but in the primary stage of the most of cases, we have few other symptoms to contend with than those indicative of irritative or inflammatory action of the gastro-intestinal mucous membrane; such cases being usually recognised as *continued*, intestinal, or typhoid fevers.

In this extensive class of febrile diseases, there are many different pathological conditions existing in the most of cases, as primary or secondary local affections, with their various concomitant symptoms, as indicative of the type of the fever; but the specific symptoms of different cases generally point to the abdomen as being the chief seat of the disease; the biliary organs and gastro-intestinal mucous membrane being the parts chiefly deranged. The respiratory and cerebro-spinal systems, more frequently the latter, commonly participate in the irritative action, as excited and kept up by the proximate cause of the fever; and we generally find the derangement of the respiratory and cerebral spinal functions bearing a proportionate intensity to the prevailing morbid conditions of the abdominal organs, as indicated by the specific symptoms.

Though we have frequently bronchitis, and very often vesicular pneumonia, occurring along with the general symptoms of fevers, those complications usually appear as distinctly indicative of such affections having occurred, either coeval with the abdominal causes of the fever, or as secondary affections, excited either sympathetically, or otherwise, in individuals predisposed or liable to such pulmonic affections. But, in all cases of typhoid fever we are apt to have, from reflex action of the abdominal section of the great sympathetic or organic system of nerves, the brain participating early in the morbid irritability of the whole system, as induced and kept up by deranged action consequent to the irritative or inflamed condition of certain portions of the gastro-intestinal mucous membrane; thus the real symptoms of the abdominal pathological conditions are frequently so masked as to lead to more attention being paid to those cerebral symptoms, as occurring in severe cases of typhoid fever, than to the morbid state of the abdominal organs—the real seat of the disease. But such irritative action once excited in the brain, and kept up by the unabated

* The writer does not consider *typhus*, *sui generis*.

continuance of the local causes of the fever, or perhaps by too early stimulative treatment, often gives rise to all the symptoms of real cerebritis, or meningitis, or to those of both combined; thus rendering the case gravely complicated, as with the structural changes and symptoms of those almost hopeless inflammatory affections. Notwithstanding such complications, there are in every case of continued fever at the commencement, usually well-marked symptoms of a deranged or morbid condition of the gastro-intestinal mucous membrane; as shown by the various appearances of the tongue, the abdominal tenderness, as with infarction and distension, and as verified by the morbid states of the intestinal and biliary secretions and excretions: all pointing to the principal primary, or proximate, morbid conditions which give rise to and keep up the specific type of the fever.

In continued or typhoid interic fevers there are many different species, according to the seat of the local morbid derangement in the intestinal canal; the symptoms of the case and the type of the fever varying much accordingly. As a general morbid condition, more especially to found treatment upon, we may adopt, for brevity's sake, the comprehensive and practical view of MM. Bretonneau, in considering the great majority of such cases, to arise from irritative or inflammatory action of the mucous membrane of the small intestines, as giving rise to and keeping up a morbid and inflammatory condition of the intestinal mucous follicles and glands, particularly those of Peyer and Brunner; which disease constitutes the *pustular enteritis*, ending in *follicular ulceration*, and which, according to the best continental and British writers, is the excited proximate and fostering cause of continued fevers, including *abdominal typhus*. But, in taking a comprehensive view of the organic causes of continued fevers, we cannot adopt the above-mentioned pathological conditions as being *de facto* the chief structural changes, as primarily excited by intestinal functional derangement, and consequent irritative or inflammatory action; for *post mortem* examinations often show organic lesions of a very extensive nature, besides the above-mentioned peculiar follicular glandular affection; as shown in erythematic and sthenic inflammatory appearances of the intestinal mucous coat, running into thinning of the gut in patches from destruction of its epithelium and sub-mucous tissues, and ultimately into broad ulceration penetrating to the peritoneal coat itself, and that too frequently giving way from still farther destructive ulcerative process. Along with those organic lesions, inflamed and enlarged conditions of the mesenteric glands are frequently present, and as still farther proof of extensive abdominal disease, there will often be found well-marked appearances of peritonitis, with partial effusion; such cases being easily recognised during the life of the patients by the abdominal tenderness, more or less tympanitic distension, accompanied generally by gurgling motions felt in the abdomen, as communicated to the touch and hearing by

manipulation over the integuments, also by the ochrey dejections so characteristic of this species of intestinal fever.

Those authors and practitioners who are opposed to the localization of the proximate causes of fever; or, in other words, those who consider fever a disease *per se*, as having no distinctive excitant organic proximate causes, look upon all *post mortem* morbid appearances more as consequences or effects of the "*ravages of the fever*" than as indications of primary morbid conditions giving rise to the disease. But derangement of individual functions from various exciting causes, as undue exposure, fatigue, the continued use of improper diet, privations, and intemperance, must tend to derange all the organic and animal functions, more particularly those of the organs of digestion; they being the parts first affected by such general exciting causes to functional derangement. Hence, in my opinion, the biliary derangement and irritative bowels in those gastro-enteric cases frequently exhibiting the "typhoid eruption," the congestive symptoms of the portal system in petechial cases, and the vitiated condition of all the intestinal secretions in the dothinteritic cases, in which the mucous coat and glands of the bowels are peculiarly affected.

Having thus taken notice, in a cursory way, of what may be considered the principal seat of the pathological conditions which obtain in the primary stage of continued or typhoid fevers, I shall now briefly consider the kind of treatment best calculated to subdue the proximate causes, by bringing about those salutary changes, as shown in improvement of the case, and as manifested in the establishment of a crisis; being the recurrence to a healthy state of the deranged organic actions and vital functions. As the title of this paper implies only one general kind of treatment, attention for the present will be specially directed to that alone; but it must be borne in mind, that the system of treatment about to be considered is not to supersede or preclude other curative means which may be absolutely requisite, according to symptoms in particular cases, but is merely recommended as *the basis* of treatment in all kinds of continued fevers.

To treat a case of continued or abdominal typhoid fever, with fair chance of success, efforts should be first directed to the administration of regimen, and medicines specially calculated to restore the deranged action of the organs or structures affected, if possible, to a normal condition, thus improving their functions, and consequently all the secretions and excretions as produced and kept up by the proper performance of those functions; such a change being brought about by so acting upon the morbid or irritative condition of the structures, by the remedial agents employed, as to excite a new action, *pro tempore*, to the gradual restoration of healthy action, and the consequent natural functions.

As in every case of continued fever, there are symptoms strictly indicative of a vitiated state of the biliary and intestinal secretions,

the first efforts ought to be directed to their healthful restoration ; and as there is no medicine, in my opinion, which possesses the same specific powers in restoring the natural functions of the liver and alimentary canal generally, equal to mercury, its various preparations are the remedies which should be chiefly resorted to in the treatment of continued or typhoid fevers. The mild and efficient effects of mercurials as alteratives, when properly administered, have always been much depended upon in the treatment of almost every kind of disease ; but as an alterative, mercury has not been hitherto sufficiently used in the primary stage of fevers. Antiphlogistic treatment, both local and general, stimulants, purgatives, emetics, and diaphoretics have all been extolled by their different advocates, and the partial use and benefit of mercurials have not been entirely overlooked ; but undoubtedly the latter preparations, in being administered in the first stage of fevers, have been too generally mixed up with the former occasionally required adjuvants, from the anxiety of the practitioner to correct all the functional derangements at once. Such having been the case, sufficient proofs have not yet been adduced in favour of the mercurial alterative plan to establish its presumed superiority, *cæteris paribus*, compared with other systems of treatment generally adopted, according to symptoms, in the course of different fevers.

It may be premised, that in every case of abdominal typhoid fever, which is generally of the dothinerteritic character, also in cases of gastric and gastro-bilious-interic fever, as well as in pure bilious fever, a safe practice is to commence the course of treatment by the regular administration of small doses either of the *sub. mur. hydrarg.*, *pil. hydrarg.*, or *hydrarg. cum creta*, prescribed as may be thought necessary, either with *pulv. aromatici* as a gentle stimulant, or *pulv. ipecacuanha* as a mild depressant ; either of the mercurial preparations being used individually or combined, according to the type of the fever, as inferred from the specific symptoms of the case, and the age, constitution, and habit of the patient. It is not to be understood that either full or moderate doses, given at long intervals, say every twelve or twenty-four hours, will produce the wished-for salutary changes, whether as directed to the biliary organs or to the gastro-interic mucous membrane ; such doses may only act as speedy evacuants, and if copiously so, from being combined with purgatives, will irritate the intestinal mucous membrane, and exhaust the patient by a too rapid draining of the biliary and intestinal secretions. And if diaphoretics were used at the same time, the case would be rendered doubly worse, for by the increased cutaneous transpiration there is a still farther draining of the fluids, not only weakening the system generally, but deriving directly from all the internal mucous membrane ; depriving it of those serous secretions absolutely required to relieve its irritative, and, as may be, congested or in-

flammatory condition. By such a mode of treatment, the patient is sure to be irritated and exhausted too much at the commencement of the case. The mercurials should be regularly administered in doses of from half a grain to two grains, every second, fourth, or sixth hour, according to the nature of the case, and continued till a change of the mucous membrane is induced; as indicated by the tongue becoming more moist, and its fur, if there has been any, consequently less adherent, exhibiting signs of breaking up.

In some very bad cases of dothinenteric typhoid fever, I have often witnessed the most salutary changes produced by the above-mentioned mode of treatment, and that in many instances in the short period of from thirty-six to forty-eight hours; and these were cases which might have been protracted perhaps for half as many days, under what may be termed the erratic system of treatment, *i. e.*, in treating every existent and perhaps only transient symptom by the varied administration of the many agents of the pharmacopœia. What should be the first object in view in the treatment of fever cases? Certainly the mitigation of the most urgent symptoms; and as these, in every case of typhoid fever, either of the bilious, gastric, or interic species, arise from and are kept up by the diseased condition of the intestinal mucous membrane and its organic system, our efforts should be chiefly directed to remedial means, possessing specific therapeutical properties, and known to act in a direct way in producing certain salutary changes in the functional parts of those diseased vital organs.

In fevers chiefly of the bilious character, the *sub. mur. hydrarg.*, continued for two or three days, given at intervals of four hours, and followed with castor oil and *enemata*, seems to answer best; the *pil. hydrarg.* being substituted if the former evacuate too much. In many cases the quantity of green and tough bilious excretions evacuated in this way is enormous; and in such cases, if the biliary and intestinal organs are allowed to remain in their pent up and depraved condition, the very worst typhoid symptoms are apt to supervene, as exhibited in universal prostration of the system, and low muttering delirium; but by timely and proper evacuation of the biliary and intestinal organs, such grave symptoms are generally prevented. Nothing but the mercurials will produce such desired effects. Stimulants, as brandy and wine, are in such cases highly pernicious; and turpentine injections, "to rouse the patient," cannot fail to increase the already too great intestinal irritation, arising from the accumulation of pent up vitiated secretions.

In the gastro-interic species, the urgent symptoms are commonly more of the gastric than of the interic character, and consequently the *toleration* of certain medicines only is eminently characteristic of the chief seat of the disease. There being always more or less pain or uneasiness at the *scrobiculus cordis*, either without or upon

pressure, the early application of leeches in the most of cases is highly beneficial; more especially if the individual symptoms be strictly indicative of considerable irritative or inflammatory action of the mucous membrane, as shown by the raw, red, partially brownish furred tongue, and the ready inclination to retching of thin muco-serous phlegm. In such cases the pure calomel is the only medicine which acts quickly in subduing the inflammatory action. It ought to be administered in grain or two grain doses every two hours, in the simple vehicle, a teaspoonful of water; no oleaginous or jelly preparations, either in the shape of food or medicine, being allowed, for such invariably increase the urgency of the gastric symptoms; as shown by increased raw redness of the tongue, arising from the irritative action of the gastro-interic mucous surface. Little else should be allowed in the first stage of the disease but plain, boiled, cooled water, which the patient may have *ad libitum*; but so soon as the tongue shows some improvement, by its becoming more moist, and less raw and red in appearance, a little thin panado or arrow-root may be given; and gradually afterwards very weak beef tea or chicken soup. It is often necessary to continue the calomel from four to six days, but generally after the first twenty-four hours of its use, the frequency of the doses may be greatly reduced, say to every fourth or sixth hour. In no other species of fever is there so much necessity to absolute strictness in diet. The smallest liberty taken in the use of any solid food will immediately aggravate, or cause a relapse of the case.* Neither castor oil nor any saline medicine can be tolerated by an inflamed mucous membrane, therefore such ought never to be administered in the first stages of the disease; the action of the bowels should always be assisted by the free use of emollient clysters. No wine nor stimulants should be allowed till convalescence is completely established; then small quantities of genuine port wine negus may be taken with great advantage, from its acting on the relaxed mucous membrane as a generous tonic and salutary astringent. The use of morphia and quinine is highly prejudicial in such cases; the former being sometimes used as a sedative in the first stage of the disease, and the latter as a tonic in the stage of recovery. Of all medicines the calomel proves the best sedative, and the best tonics are the mild nutrients above mentioned.

Following out the above view of treatment, as based upon the proximate causes of continued or typhoid fevers, all remedial means should be directed towards a correction of the existing morbid conditions which keep up the fevers; and as a salutary change in the functional action of the different abdominal secretory and excretory organs is quickly brought about, so is the crisis or "*turn of the fever*" quickly established. In my opinion, it is quite absurd to talk of fevers "*taking the turn*" on certain critical days,

* The "*relapse*" fever of some authors.

as the seventh, fourteenth, twenty-first, &c.; but this very learned prognostic theory, *like fortune-telling*, has been naturally based upon broad enough latitude of time, so that when a favourable crisis or turn happens to take place *on any day*, say betwixt the seventh and twenty-first, a little sage calculation, instinctively as it were, notes the seventh, fourteenth, or twenty-first as being *the critical day*! A crisis of the fever takes place when the healthy action of the deranged organs has become somewhat established, either through the efforts of nature alone, or as assisted by remedial means; and the crisis is sure to be a more certain one under judicious treatment, locally directed, than what might occur by long waiting on the unassisted "efforts of nature," or even by the very specious expectant system of treatment, according to the doctrines of "certain critical days." A safe crisis can only be quickly brought about, in the first stage of the fever, by restoring the healthy action of the deranged parts; for if the derangement be not speedily corrected, partial disorganization of the affected organs may take place, leading to the development of the many morbid conditions of the intestinal canal referred to above: after the occurrence of which, a salutary crisis, in the great majority of cases, shall not occur, such being the fatal cases of abdominal typhoid fevers. Prophylactic or preventive treatment is of the first importance in bringing about a favourable crisis or state of the case. *Allowing nature to take her course* is tantamount to leaving the patient to his fate, as preyed upon by a disorganizing internal disease, and as consequently kept in a severe fever by a daily increasing irritative or inflammatory proximate morbid cause.

In fevers, as much as in almost any other class of diseases, the medical practitioner has in his power the bringing on of a salutary change or crisis, and of course this will be the more certain if called in early to the case; but if, from long continuance or neglect, any disorganizing process has commenced, then the *alterative* or any other course of treatment will, in the most of such cases, fail. But even in apparently hopeless protracted cases, I have often seen all the bad symptoms give way, and the powers of the system gradually rally, under even a very short course of the *alteratives*, as followed out by the administration of continued and frequently repeated small doses; and no mercurial preparation, in such cases, is equal in curative powers to the sub. mur. hydrarg., given in grain or two grain doses, say every second or fourth hour, and simply by itself, as mentioned before, in a teaspoonful of water. Administered in this way, it seems to exert the most benign influence over the morbid state of the biliary organs and intestinal mucous membrane; and instead of having found it to act as an irritant, as some suppose it does, I have invariably found its effects to be those of a gentle salutary stimulant to the mucous membrane, and consequently to the organic system of nerves: and ultimately in proving the best sedative, by doing away alike with the concomi-

tant irritation of the bowels and biliary organs, as with the consequent irritative action of the brain and nervous system generally. In short, so soon as the mercurial begins to exert its influence on the mucous membrane, so do all the persistent symptoms of the fever begin to give way; the skin and tongue becoming more moist, the pulse slower and softer, and the delirium, if there have been any, reduced: accompanying changed conditions of the stools and urine, giving decided testimony of the elimination of the system from all the pent up products, unavoidably generated in the different secreting organs throughout the primary stages of the fever.

In the above-mentioned system of treatment there is nothing new in principle, but hitherto the great majority of practitioners have not been sufficiently alive to its paramount importance; indeed, I may say, to its universal superiority over all the other systems of remedial means generally had recourse to in the treatment of the different kinds of intestinal or typhoid fevers. Such, no doubt, has partly arisen from the many prevailing prejudices which exist against the continued use of mercurials in the general practice of medicine, from supposed bad effects following even slight mercurialization of the system; but I may mention here, that in the treatment of upwards of three hundred and twenty cases of continued intestinal fevers, I do not recollect of having had a single case of what might have been termed salivation. During the first stage of the fever the deranged or morbid condition of the mucous membrane seems to prevent the absorption of the mercurial; and after that has given way to its stimulative and sedative effects, all the biliary and intestinal secretions are so increased and quickly carried off, that there is little risk then of much absorption, even although the mercury should be continued for a day or two after the crisis of the fever is established.

As auxiliaries in the treatment of continued fevers, perhaps too much importance has been generally attached to the use of diaphoretics; the efficacy of those medicines being questionable in such cases, where there is generally considerable gastro-intestinal dryness and accompanying irritation, their effect being to derive from the internal mucous membrane to the skin, and, consequently, to deprive the former of those advantages which would accrue from an increase, or even a tendency to that of their wonted mucous and serous secretions. Under the *alterative* system of treatment, the skin invariably becomes moist as the mucous membranes become so; the sure indications of which are the changed appearances of the tongue, and of the alvine and urinary excretions.

That the *alterative* system of treatment in continued fevers is the most rational, as founded upon physiological and pathological principles, is easily proved by a brief reference to the vital actions as existing in health, and the morbid changes as obtaining in

continued febrile disease. The lassitude and general prostration of the system occurring in fevers, and as arising from the cessation of organic nervous action, in consequence of the deranged condition of the functions of those organs first at fault, in respect to both their organic and animal functions, are kept up by the necessarily generated products of the system not being eliminated by their various emunctories into the open canals and cavities, into which all the secretory and excretory vessels pour their products, in a state of health. Such being the case, the whole system becomes quite pent up, as it were, and there is neither the organic aptitude, nor the natural desire for elimination of the products generated; which general *malaise* leads to inaction of the nervous system generally, and to that peculiar irritative state of the brain, giving rise to incoherency and stupor, and likewise to that muttering delirium, which is almost peculiar to typhoid fevers. In such a state of the system, all the organic and animal functions are in a great measure suspended; and consequently, whilst the depuratory functions are all but ceased, so are the nutritive, the system, for the time being, working upon its own encumbered vital resources; its absorbents taking up its own organic assimilated products, to throw them into the natural outlets, already too much surcharged by their constantly accumulating contents. And we must add, to that general preying upon the body by the constant action of its own absorbents, its almost utter privation from nutriment; in consequence of the lacteal and lymphatic systems, as existing in the chylipoietic viscera, being so deranged in their absorbent powers and other organic actions, as to render them for the time quite incapable of administering to the support of the system. In short, we have general prostration, in consequence of all the vital functions of the system being deranged, and more or less suspended; such derangement arising from the partial or almost complete suspension of those *sine qua non* organic actions—chylicification, intestinal absorption, secretion, and excretion—the grand preservative and health maintaining animal functions.

Such being the primary and principal pathological conditions as obtaining in typhoid fevers, the administration of mercurials, in continued, small, and often repeated doses, so as to change the existing deranged condition of the biliary organs and gastro-enteric mucous membrane, is the only sure and rational system of treatment in the primary stages of these diseases. But it must always be borne in mind, that local bleeding, blistering, counter-irritation, and other counteractive remedial means applicable to particular symptoms, are not to be dispensed with in any cases requiring such adjuvant treatment. In the majority of cases, the mercurials require the assistance of *enemata*, also an occasional dose of castor oil; but in all cases of the gastric type, with raw, red, or slightly browned furred tongue, the administration of oil in the early stages invariably exasperates the symptoms; causing

great depression of the system generally, increased gastric irritation, as shown either in deeper redness of the tongue, or in its papillæ being more raised, more thirst, and also in increased intolerance of pressure over the scrobiculus cordis. In such cases, castor oil seems to act quite as an irritant on the inflamed gastro-intestinal mucous membrane, and so do all saline medicines; therefore, solution of Epsom salts should not be given in any case of gastric fever, nor in gastro-enteric cases, as it drains the intestines too much of their mucous and serous secretions; but castor oil is commendable in purely enteric cases, as it at once lubricates and evacuates the bowels.

The dietetic treatment of fever cases is of the utmost importance, and as the *alterative* system is incompatible with many usual practices, I shall very briefly mention a few particulars, as consistent with the use of mercurials.

As nothing tends more to the alleviation of severe feverish symptoms than the free use of diluents, such should be given, *ad libitum*, in all cases of fever. Of such beverages, plain, boiled, cooled water is the best; and in promoting the good effects of the mercurials, it seems to act by diluting the scanty, and perhaps acrid secretions, so tending to the maceration and softening of the intestinal muco-villous coat; thus rendering it more susceptible of the effects of the mercury, and consequently sooner and easier acted upon in an alterative way. All acid drinks should be avoided at first, as they invariably irritate the bowels, and create more thirst than that for which they may be given to allay; but after the tongue becomes moist, such may be sparingly allowed, in conjunction with the mild diluents, boiled water, milk and water, whey, and barley-water, or thin-strained gruel. Buttermilk is, perhaps, one of the best acid drinks we possess, and, diluted with warm water, is copiously diluent; and being somewhat nutritious, it is deservedly much used in our hospitals here, as common drink in all sorts of fevers; it is, moreover, in general, very grateful to the patient.

The diet of fever patients should be attended to as early as possible; indeed, in almost every case, it is proper and safe to give weak beef tea, or soups, from the very commencement, as they produce a good effect on the mucous membrane as nutritious diluents. I have invariably found their early use of decided advantage in promoting an early crisis, and also in the prevention of the sequelæ of fevers during convalescence; the patient having always made, apparently, more steady and progressive improvement under their continued administration. In fevers, however, purely of the gastric kind, even the weakest beef tea or soups cannot, in many cases, be tolerated in the first stages of the disease, as they seem to act on the inflamed mucous membrane similar to castor oil, viz., as an irritant; such cases must, therefore, be treated with panado, and light farinaceous milk diet, which

answers well with small doses of the *sub. mur. hydrarg.* as the *alterative* medicine.

Although the mucous membrane, in many cases of gastro-enteric fever, may not be capable of digesting nor assimilating completely even sloop aliments, the cautious and early administration of them gives it something salutary to act upon; which pabulum tends materially to the restoration of the healthy functions, by gradually inducing chylication, as inductive to the organic processes, intestinal secretion, absorption, and excretion, being restored. Solid food, if we except bread given as panado, should not be allowed until continued convalescence is established. Tea seems to agree well with the most of fever patients; along with weak soups, it proves an excellent, mild, diffusible stimulant.

In respect to the advantages of wine in the primary or persistent stage of continued fevers, not excepting the apparently most depressed cases of the typhoid type, I have almost universally been disappointed. The early administration of wine or brandy, "*to support the system against the fever,*" invariably tends to produce a general irritative state of the whole system, and never fails in bringing on, or in increasing and keeping up, delirium; which general nervous and cerebral excitement too frequently ends in a comatose state of the brain, from complete inebriation, and consequent vascular congestion. By such treatment, a surcharged *spirituos* state of the system is superinduced, regardless of the already pent up and engorged state of the abdominal organs; a state or condition requiring, in nine cases out of ten, the very opposite kind of treatment, viz., that of a generally relaxant and evacuant nature. After a crisis is established, the good effects of small quantities of wine in furthering convalescence, by imparting tone and vigour to the system, cannot be doubted; but the immense quantities of wine and brandy which are commonly given here in cases of continued intestinal fevers, by way of "*supporting the strength*" of the patient, cannot fail in giving rise to such increased action of the system generally, that would even prove dangerous to a person in health, as affecting the general nervous and cerebral organism. How much more, then, must the risk be, as affecting deranged or inflamed structures?

Under the *alterative* system of treatment, the rate of mortality in my practice, in 320 cases of continued intestinal fevers, was 14 deaths in all, or about one in 23, accounted for as follows:—One old woman died from senile gangrene of the feet. One married woman from hæmorrhage *per rectum*; she had got a favourable crisis, but from having been rashly taken out of bed, and shifted to the skin, a shivering came on, which was followed by sudden and profuse hæmorrhage, from which she died within an hour. One young woman, from the weakening effects of epistaxis; the plugging of the nostrils seemed to aggravate the typhoid symptoms: this case was supported with wine. One dissipated man,

aged 46, from extensive sloughing of the nates, supported with wine and brandy. One middle-aged man, from typhoid pneumonia. One child, who had symptoms of cerebritis, along with those of intestinal fever, from commencement of attack, and was treated accordingly. The other eight deaths seemed to arise from the local abdominal disease, and other organic derangements excited in the system; these having been too intense to admit of curative effects of the treatment employed. *Post mortem* examination was allowed in only four of these cases; in one of which there was ulceration of the mucous membrane of the ileum, with very apparent thinning of its coats, in pretty large patches, and with well-marked appearances of increased vascular action having existed in the jejunum and upper part of the colon. In two of these cases, again, some of the glands of Peyer and of Brunner were evidently tumified, and presenting the appearance of minute ragged ulcerations, as surrounding their mucous follicles. In the fourth case, the small intestines had been inflamed, seemingly throughout their entire coats, which appearances of inflammation extended over the mesenteric reflection of the peritoneum, and partially to that lining the abdominal parietes; there was no ulceration of the mucous membrane, but the mesenteric glands appeared tumified or enlarged; throughout the course of this case, there was much intestinal gurgling and ochrey stools, with partial abdominal tympanitic distension. The brain was not examined in any of the cases, as none of them showed urgent cerebral symptoms; neither were the lungs, as the chest symptoms were not of an imminent character, excepting the case ending in typhoid pneumonia, in which no *post mortem* examination was allowed.

It is right to mention, that the whole of the 320 cases alluded to were treated in village and country practice in Fifeshire; but I have hitherto found the *alterative* and non-stimulative system of treatment equally successful in my practice in Glasgow.

IV. *Case of Congenital Malformation.* By James Morton, M.D., Glasgow.

On the 20th June, 1854, I was called to Mrs. D. T., in labour of her third child. The presentation was that of the breech, but delivery being speedily accomplished, the respiration of the child was easily established.

On examining the infant, two unusual projections were observed anterior to the right ear, on the lower part of the cheek, which resembled, both in appearance and touch, the structure of the external ear, and suggested the idea of an attempt having been made to form a redundant ear, though of a very rudimentary

character. The normal ear on the same side was perfectly developed, and even larger than the left ear, thus dispelling any supposition of these prominences being due to displacement of parts of the cartilage of the right ear itself. There was also a want of symmetry in the development of the sides of the lower maxilla, the left being normal; whereas that of the right side was deficient in a considerable degree, apparently shorter than the other, and giving to the face the appearance as if the mouth was drawn to the right side, the soft parts attached to the jaw appearing to partake of the partial arrest of development.

I had the pleasure of showing this case to Dr. Pagan, Professor of Midwifery in the University, who was perfectly satisfied that there was a redundant production of auricular structures. It was resolved to remove these prominences when the child should attain the age of three months, but at that time the father was laid up by an attack of gastric fever, which caused a delay of a few weeks. About the middle of October, when the child was four months old, Dr. T. Paterson was requested to take a cast of the parts, which he has represented very faithfully in a wax model, now in my possession. Yet this necessarily conveys but an imperfect idea of the appearance of the parts, and none at all of their structure and feel; for the projecting parts could be felt, under the loose skin of the lower part of the cheek extending inwards, and attaching themselves, in some manner, to the ascending ramus of the inferior maxilla.

Two days thereafter, with the kind assistance of Dr. J. G. Wilson, the prominent parts were removed by the knife; and as their centres were found to be cartilaginous, a small part of each of the remaining pieces of cartilage was further snipped out, to permit the skin to unite over them. These pieces of cartilage seemed to have a deep connection with the fibrous investments of the inferior maxilla; and one of them, the anterior, was cylindroid, or rolled upon itself, like a small roll of paper, forming a ring of cartilage, and suggesting the idea that this was the result of an attempt to form the external auditory passage for an additional ear. The parts were carefully strapped in the usual way, and in three or four days were completely healed, leaving a very slight scar. A thin slice of the cartilaginous structure was submitted to the microscope, when the appearances characterizing that tissue were at once apparent. No evidence of hereditary transmission could be elicited by careful inquiry.

Remarks.—Malformations have been divided into two great classes; viz., malformations *per excessum*, and malformations *per defectum*. The present case cannot be classed under any of these heads. It may be said to partake of the characteristics of both, which circumstance considerably enhances the interest attaching to it. We have the *per excessum* exemplified in the structures resembling those of the external ear; the *per defectum*, in the construction

of the lower jaw. We are thus afforded an example of the law of compensation, for which some physiologists contend, the *per defectum* being balanced by the *per excessum*. This principle was styled by St. Hilaire and Breschet, the "*loi de balancement*," or "*balancement organique*;" and these two authors have inferred that organic hypertrophy can only occur, *in utero*, at the expense of the development of some other part. But cases are numerous in which no attempt at compensation can be remarked.

An opinion has been advanced, somewhat favoured, it is true, by an observation of Valentin's, that some accident, or similar disturbing cause, is the means of preventing development, according to the normal type; and the supporters of this view would suppose that what had been wrested from the maxilla has been bestowed upon the ear, and had resulted in the very rudimentary attempt at the construction of a redundant external ear.

It certainly is not unreasonable to conclude, that accidental injuries, and it may be displacements, are incidental to every stage of existence; and as we have many proofs of their occurrence and effects even in embryonic life, at a period of comparative advancement, consequently it is a fair induction, that circumstances of a similar nature, occurring at an earlier period of development, may probably originate that state of parts which produces a departure from the normal type. It must, however, be admitted that this hypothesis will not apply to all cases, and that the subject is still in want of a satisfactory elucidation. Excess of formative power is another supposition which has been offered as an explanation; but in this instance, as in many double monsters, we have excess in one part, and defect in another; so that, in addition, a wrong distribution of that power must be presumed.

In the numbers of the *Monthly Journal of Medical Science* for December, 1846, and April, 1847, Dr. Allen Thomson has detailed several cases, in which absence or closure of the ears, with deafness more or less marked, in different cases, was observed to be frequently connected with "occasional irregularity or deficiency in the development of the molar, palatal, and maxillary portions of the face."

We also find that Professor Vrolik, in the *Cyclopædia of Anatomy and Physiology*, enumerates a series of such deformities, under the section—"Deficiency of the Under Jaw" (or Monotia). In the first, there is "total defect of the opening of the mouth." The case of a lamb is narrated, in which the under jaw was totally absent, and the ears removed to the base of the head, and coalesced; and behind these, an osseous vesicular cavity, formed by the bulbous tympanic cavities, united together. In the second class, "the opening of the mouth represented by a fissure at the inferior surface of the face." In such there is a rudiment of a tongue, though the lower jaw is wanting. The third class is distinguished by "too short an under jaw." Besides being short, the jaw is

more depressed posteriorly than it ought to be. "This original brevity of the under jaw is the cause of a great many ulterior deformities. The total defect of the opening of the mouth is the highest, the too short under jaw the least, degree of malformation." This defective development of the lower jaw does not coexist only with defective or displaced ears, as we find it also in the class of monsters styled Cyclopia. Professor Vrolik remarks on this point—"Want of the under jaw often coexists with cyclopia. By this complication is formed a peculiar series of monsters, which make a gradual transition to those in which, notwithstanding the presence of two eyes, the under jaw is absent."

The reason assigned for this connection between the jaw and ear in cases of malformation is, that parts originally developed from a common mass, or from the same part of the embryo, even though dissimilar in themselves, are not unfrequently found united. Examples of this are found in union, or rather non-separation, of the bladder and rectum, and also of the pharynx and larynx, and of the nose and mouth, in bad cases of harelip and cleft palate. Moreover, we find that the ear and jaw—the lower one I mean—are originally developed from the same branchial plate, so that any disturbing cause, acting upon this before their separation, must unavoidably influence both in some degree.

The child, whose case I have been considering, being a female, leads me to remark, that malformations having by statistics been shown to be more frequent in females than males, the fact has led Dr. Adam of Dumfries to advance the theory, that the malformation determines the sex; but I fear we cannot altogether adopt this hypothesis, or even recognise the foundation of it as probable. It is as follows:—"I am of opinion," says Dr. Adam, "that it may occur thus—A higher degree of formative power is probably requisite for the conversion of the embryo into a male than into a female child, for the margins of the sinus urogenitalis need to be developed more largely, and to be united more extensively, in the constitution of the male perineum and scrotum. If, therefore, from the fifth to the fourteenth or sixteenth week, anything happens to disturb or arrest the development of the embryo, its autotrophy, or inherent formative power, becomes so weakened, that it cannot possibly accomplish the perfect closure of the primitive cloacal fissure, and the foetus, consequently, becomes a female. This hypothesis may not stand the test of future researches. I merely offer it, because it seems to me capable of explaining the great frequency of females among malformed children."

The mystery obscuring any attempt to explain the occurrence of such a malformation as that detailed in this paper, and ignorance of any case precisely similar being on record, have induced me to suppose that a short detail of it may not be uninteresting to medical readers.

V. *Remarks on Certain Cases of Intestinal Obstruction.* By
JAMES PATERSON, M.D., Partick.

IN the course of practice there is no class of maladies of more common occurrence than deranged states of the digestive canal, that have been occasioned by the ingestion of unsuitable food, or by habitual inattention to the functions of the bowels. Of the different derangements which call for assistance, those resulting from habitual constipation occupy a prominent place. We have many very excellent descriptions of the evils which this state of body entails, and especially in an eminently practical work on the subject by Dr. Burne. This gentleman details very fully and carefully the different circumstances under which constipation is produced, and the portions of the intestinal canal where obstructions may occur, with the varieties of symptoms that are noticeable in different cases. Elsewhere we have many descriptions, often of great minuteness. And yet the class of cases to which I desire to draw attention have not their prototypes in the works named. There is either a description which cannot apply to them, or one so general, that it fails to single out, and call attention to, their specialities. In making this statement, I must make an exception in favour of a notice which appeared some months ago, in one of the London weekly journals, in which the cases that were brought under review seemed identical in character with those which had previously engaged my own attention. The name given in this article to the cases described is "Typhlitis" (*τυφλω, cæcum*); but, as it appears to me, somewhat improperly, as the condition is only occasionally one of inflammation.

In ordinary circumstances, the normal action of the bowels is sufficiently provided for by the stimulant and lubricating effects of the bile and intestinal secretions, which have been poured into the canal to aid the digestive process; but where the relationship of the food on the one hand, and of the digestive juices on the other, has been disturbed, the function of the bowels becomes altered in proportion. In some instances, the character of the ingesta may be such as to provoke a superabundant flow of the digestive secretions, when a diarrhoea may result, and prove as effective in removing the evil as it is salutary. But, in the majority of instances, the opposite evil occurs. The secretions are thrown into the canal in quantities too small to insure the passage onwards of matters losing their own moisture and becoming excrementitious. Besides, being too dry in character, the food is, in all likelihood, such as, little by little, to overstimulate the liver, until it has become congested and sluggish, with a diminished excretion of bile. The portal system is necessarily too much loaded, and the reaction being traced backwards, is found to insure a diminution of the secretive action of the intestinal follicles. It

is unnecessary here to allude to the sedentary habits, and other well-known external causes, so potent in inducing and perpetuating the condition of constipation; my present purpose will be fully served by calling attention to the internal changes, irrespective of the special causes which may have been at work in different individuals. In a majority of the cases in which the changes named occur, the different steps of the process of deviation from sound health are so insignificant, that, for a long time, they are unobserved, but though delayed, the ultimate results are not the less certain. For a time—it may be for many months—the bowels are daily evacuated, and the individual believes that their functions are perfectly performed, the trifling dryness of the matters excreted not being such as to attract his observation. All the while, however, the fæces have been accumulating, but so gradually as to have given rise to no disturbance. The evacuation of to-day contains part of what ought to have come yesterday, and so on, until the accumulation has become so considerable as to occasion the painful spasmodic attacks known as colic. In ordinary circumstances, a smart dose of purgative medicine and an enema are probably sufficient to remove the accumulation and to relieve the symptoms, and after a day or two the patient is as well as ever. Thus far the cases are sufficiently common in their occurrence, and have been often described with much minuteness; but those which follow present characters deserving of careful and special notice, and which—except in the place above noticed—have been overlooked amidst vague generalities.

If, from the accumulation of residual matters being yet more gradual than usual, the acute symptoms have been delayed until the small intestine has its share of the load, the character of the symptoms is more urgent. The smallness of the opening leading from the ileum into the caput cæcum will explain how readily obstruction can occur there, even when the fæces are but little removed from their natural consistence. To produce this obstruction, we require nothing more than that the cæcum should be somewhat loaded, and that the whole colon should be deficient in its contractility from long-continued distension. I may here remark, that I have never met with any case, having the more special characters, without obtaining a history of previous attacks of what seemed to be ordinary colic. These accumulations, then, on the one side in the cæcum, and on the other in the ileum, retard, little by little, the current in the already sluggish portal circulation, and one result is serous effusion into the sub-mucous tissue; chemical changes in the retained fæcal matters occasion the evolution of various gases, which go to increase the distension; and if continued long enough, these various sources of irritation will lead to inflammation of the parts. In most instances, however, the acute symptoms appear some time before there is any tendency to enteritis, so that this condition may probably be usually the result of neglect. While

the *origo mali* has been quietly forming and acquiring potency, there has been no feeling of impending illness; a certain amount of distension may be present in the right iliac region, and yet the individual feels so well that its presence never costs him a moment's reflection. The appetite may be, nay, usually is, excellent, and when the symptoms supervene suddenly, as usual, great astonishment is expressed that any pain should occur while the system is in such perfect health. The attack is precisely like that of ordinary colic, but is much more sudden, and greatly more acute. The pain often appears to be excruciating, and remits but little. If asked to particularise the spot where the pain is chiefly felt, the patient will say that it is all over the abdomen, but examination shows that it is most severe in the right iliac region, and that, during the slight remissions, it is almost entirely restricted to this spot. The condition of the sufferer is sufficiently miserable; he can procure no sleep; there is generally sickness with vomiting of bilious matters; the tongue is swollen and indented, and is covered with a thin yellow fur; there is no appetite, and but little thirst; the urine is dark-coloured and thick, but may be unaltered; the bowels are generally reported to have been quite regular, or only slightly constipated. Amid all the pain, the pulse is calm and regular, and but little, if at all, quickened. On examination of the abdomen, a distinct fulness is felt in the right iliac fossa. The rounded form of the intestines can be felt, firm at the lower part of the swelling, but becoming softer in a direction radiating from this point. Continuous pressure displaces flatulence, and diminishes the size of the swelling, but it speedily resumes its original bulk when the pressure is withdrawn. The tumour is the seat of a constant pain, which is generally very acute, and there are frequent paroxysms of pain stretching upwards and across the abdomen. It is seldom that the comparatively local seat of the pain can be ascertained without a considerable amount of careful questioning, the frequent recurrence of the paroxysms having the effect of causing a belief in the mind of the patient that the pain is general. Such is an outline of the more common symptoms attendant upon this distressing malady.

In commencing the treatment, it is often indispensable to allay the acute pain before trying to procure evacuation of the loaded bowels. Purgatives given at first, in such cases, often do no more than aggravate the symptoms. I have found an enema, with tincture of assafoetida and solution of morphia in thin gruel, to produce the happiest effect, being followed by a refreshing sleep of several hours' duration. In such circumstances, we must not be deceived as to the patient's condition, for he will declare himself quite well, and if the bowels have acted in the interval, we may too readily believe him; but we may still feel the swelling at the side of the abdomen, and may readily produce severe pain by even moderate pressure. The symptoms have been merely lulled, but will as-

surely return with even greater violence, if the treatment be suspended. The curative treatment is probably best commenced by the injection of gruel in large quantities, by means of the long tube recommended by Dr. O'Beirne. After some hours, there may be passed some mixed scybalæ, with the effect of lessening the swelling and partially subduing the tenderness at the right side. The injection may now be repeated in the same manner, and the result may be the discharge, after some time, of a still larger amount of softish scybalæ. At this stage, we may properly administer purgatives by the mouth, and note carefully their effect. If they produce free discharges, and still further diminish the swelling, the symptoms will probably subside rapidly; but if the swelling enlarges, and there is much movement of flatulence from one part to another, while, at the same time, there be little or no evacuation, we have quitted the injections too early, and must again have recourse to them. In many of the less severe cases, I believe much benefit may result from beginning with mild purgatives at once, employing, at the same time, the common enema apparatus. A few drops of laudanum may be beneficially added to each dose of the aperient.

The purgative that I have been in the habit of employing is the Epsom salts, which seems, when largely diluted, and combined with ten or fifteen drops of the diluted sulphuric acid, to answer the object in view better than most other cathartics. The dose should, generally, not exceed two drachms, dissolved in twelve or sixteen ounces of water, and may be repeated every alternate hour until the effect be produced. Given in this way, and especially if the patient be desired to drink freely of gruel during its use, the sulphate of magnesia seldom fails to occasion free watery discharges, an effect of great value, when it is desired to clear the intestines of scybalous matter. Besides being more effective, saline purgatives appear to cause much less abdominal pain and sickness, if the precaution to dilute largely have been observed. The time during which the purgatives and the enemata are to be continued must be regulated by the need which calls for their use; but, on the whole, it is better not to give much medicine by the mouth, but rather to continue the injections, until their purpose is sufficiently accomplished. One reason for this precaution is, that even when free evacuations have been repeatedly obtained, and we believe the canal to be quite free, there will still remain an amount of tenderness on pressure, easily aggravated by whatever may tend to irritate. For this condition a fly-blister is generally required, and has the effect of reducing the remaining fulness, and of removing the tenderness. Sinapisms do not seem to answer, at least there has not been much benefit derived from their use in my hands. Curiously enough, the bowels very often discharge freely large quantities of thin feculent matter, several hours after the application of the blister. The diet all the while should be

such as to support the strength, and yet must be light and easy of digestion. With this object, beef tea, with bread, rice, sago, &c., may be given in small quantities, frequently repeated.

These means, varied according to circumstances, form the essentials in the treatment of such cases, and, if commenced early enough, prove eminently successful. But where, on the contrary, delay has occurred until the parts have become inflamed, not only may the treatment of the obstruction require modification, but, in addition, the means calculated to subdue the inflammatory action must form a sequel to the steps already named. In cases of the latter description, the greatest care will be demanded, lest the obstruction should escape notice, for instances are not wanting where this has happened, the attention of the physician being directed solely to the obtrusively prominent symptoms of the enteritis. Symptoms of inflammatory action, with great abdominal tenderness, confined principally to the right side, may, with justice, raise a suspicion of obstruction in that portion of the intestinal canal. It is to this class of cases that the name *typhlitis* properly applies.

As the particulars of actual cases serve to impress the principal facts on the mind, the following may be stated :—

A. B., aged 32.—April 30th, 1855, noon.—This morning, about five o'clock, this gentleman was suddenly seized with colic, which has continued to increase until the present time. About seven he took some castor oil, which has had no effect. The pain is constant, but aggravated by oft-recurring paroxysms, and has been such as to cause great suffering. The pulse is 80; skin cool; tongue swollen and flabby, and covered with a yellowish coating; there is sickness, and occasional bilious vomiting, after each attack of which the pain is somewhat relieved; no thirst; appetite gone; the bowels are said to have been regular. On examining the abdomen, there is no pain produced by pressure, except in the right iliac fossa, where there exists a distinct rounded swelling. The ascending colon can be felt distended with flatulence, which is in great measure displaceable by continued pressure. The pain is experienced chiefly when pressure is exerted on the lower part of the tumour. There was ordered for him an enema, with a quart of gruel, to be repeated according to circumstances; and to take afterwards, for three times, a colocynth pill with one grain of calomel every six hours.

Next morning he seemed easier; the bowels had acted slightly, but the swelling was little diminished in size. The same evening, the pain became greatly more severe, so much so as to cause him to toss about continually; pressure on the right side of the abdomen could not be tolerated; abdomen distended with flatus; pulse calm. Ordered an enema of mixture of assafoetida, with fifty minims of solution of morphia, in ten ounces of gruel. A sinapism had been applied with little relief.

May 2nd, 10 a.m.—The pain subsided almost completely after the injection; he slept several hours, and feels greatly better. The belly is softer, except at the right side, where it is unchanged.

Enema with gruel and castor oil.

3 p.m.—No effect from the injection. At this time the long tube was passed fourteen or fifteen inches, and three-quarters of a gallon of gruel injected.

10 p.m.—There has been a considerable evacuation of pultaceous matters, but not yet in sufficient abundance; belly softer, and swelling less, but still painful when pressed upon. *Enema with gruel and castor oil to be repeated.*

May 3rd, 10 a.m.—Further action of the bowels during the night. Feels better in every respect, but there is still fulness, with pain on pressure, in the right iliac fossa. *Blister over the tumour.*

4th.—Pain on pressing the swelling much less than yesterday. A little catching pain in the right hypocondrium.

5th.—Improving. *Tincture of valerian 20 minims, with 4 minima solution of muriate of morphia, every two or three hours.*

6th.—Patient sat up for some time yesterday, but felt a return of the pain afterwards. The tumour, which had nearly disappeared, is again felt, and there is considerable uneasiness by pressure on the part.

7th.—Condition of patient much the same. *Calomel, opium, and nitrate of potass. every eight hours.*

8th.—Somewhat improved; pain still present. *Blister repeated, and one powder at bedtime.*

10th.—Uneasiness quite gone. Pressure borne well.

12th.—Is quite well, except that the strength is not yet returned.

In this case, the points worthy of remark are, the sudden onset of the symptoms, at a time of supposed perfect regularity of the functions of the bowels; the comparatively local character of the pain, and the trifling disturbance of the general system; the presence of the tumour in the right iliac region; the inefficacy of an ordinary purgative dose to relieve the symptoms; and lastly, the copious discharges after the use of the long tube, and the other treatment already noticed.

C. D., aged about 36.—Feb. 7th.—I was consulted in consequence of an attack of severe pain in the bowels, commencing suddenly, and described as being general, but found by examination to be continuous in the right iliac region, and elsewhere through the abdomen merely paroxysmal. There is a swelling, as in the last case, but it is not so distinctly marked. *Small doses of Epsom salts with sulphuric acid every two hours.*

9th.—The discharges have been copious, dark, and offensive.

11th.—Symptoms greatly mitigated; pain gone, but still reproducible to some extent by pressure. *Blister to the swelling.*

12th.—Feels greatly better, and has been sitting up; dejections free.

This patient erred in going out to business before being permitted to do so. He occasionally had his feet wetted, and was otherwise uncareful of himself. He continued to suffer from the pains of colic, which at times were pretty severe, but which yet did not warn him to quit his occupation. *Infusion of quassia, with iodide of potassium.*

On the 1st of March I learned that he had suffered from want of sleep, with occasional abdominal pains; bowels somewhat irregular, with considerable flatulence. *Tincture of hyoscyamus and solution of morphia, each half a drachm, at bedtime.*

2d.—*Colocyath, extract of hyoscyamus, and mercurial pill, every six hours.*

3d.—Bowels improved. *Continue the pills.*

6th.—Since last report, patient has been a good deal exposed, and this morning had a return of severe abdominal pain. Examination shows this to be general, increased by the slightest pressure, and to be not at all paroxysmal; he is sick and restless; pulse very quick and small; bowels free. The symptoms are considered to indicate the presence of peritonitis. *Calomel, opium, and bicarbonate of soda, every four hours. Large blister to the abdomen.*

7th.—Feels much better; pain now trifling; pulse improved. *Repeat the powders.*

10th.—So far improved as to require no further attendance.

From this time he had recovered slowly, but had never been vigorous. The bowels were irregular, and he had occasional attacks of pain in the abdomen. All the while, however, he was attending business. On the 6th of April he had a severe attack of hæmatemesis, which reduced his strength considerably, and kept him in bed for a fortnight. After this he acted more prudently in remaining closely in-doors, and is now quite restored.

This case differs somewhat from the other, in the circumstance that the bowels were known to be habitually irregular; the symptoms, probably in consequence of this, were at first less severe, and yielded more readily, though not in a shorter time. In both cases, it is worthy of note, that exertion at too early a period produced a renewal of illness, which in the first case was a pure relapse, and in the second was an attack of a different description. This circumstance points to an obvious practical conclusion.

The case of an elderly woman, the details of which I cannot give, as I did not take any notes at the time, illustrates a point which often proves of great practical value, and which I have mentioned above, viz., the benefit derived from purgatives, after other treatment for two or three days, their use having, in the first instance, seemed to be attended with increased suffering.

In offering these few remarks upon a class of cases which has occupied my attention, I shall be glad if the experience of others corroborate my views, which cannot claim to be original, other-

wise than by isolating cases that have often been mingled with others in a general description, while their peculiarities seem to entitle them to separate notice.

VI. *Notice of Recent Researches on the Origin of Entozoa, more especially of Tape-worms.* By ALLEN THOMSON, M.D., F.R.S.S., London and Edinburgh, and Professor of Anatomy in the University of Glasgow.

(Read to the Glasgow Medico-Chirurgical Society.)

THE first origin and the subsequent development of the various Entozoa, or internal parasites, which infest the body of man and animals, are subjects of investigation which have always presented great difficulties, partly from the very great changes or metamorphoses in the external form and internal organization which many of the entozoa undergo in the course of their advancement from the embryo to a state of maturity, and partly from the circumstance that the different stages of the same entozoon, which find their appropriate habitations in different animals, or, it may be, in the free as well as in the parasitic condition, have, in many instances, been known only separately. It has, therefore, been the work of great labour and research to establish the relation of affinity subsisting between the different forms in which these animals present themselves in the successive phases of their development.

So lately even as in the present century, at the time of the publication of Rudolphi's systematic work on the Entozoa in 1808, and of Bremser's in 1818, a group of animal forms was recognised as constituting an entire order of the class Entozoa, viz., that of "Cystica," or the vesicular worms, which more recent researches have shown to consist of no more than various larvæ, or earlier stages of the complete or mature entozoa belonging to the order "Cestoidea," or tape-worms.

It cannot be doubted that the researches of physiologists and naturalists within the last fifteen years have produced a very great change in their manner of viewing the organization and mode of life of this remarkable class of beings, and have tended especially to bring some of the phenomena of their origin and reproduction more within the general laws of these functions, as recognised in other animals, than seemed previously to be possible. The obscurity, which for so long hung over the manner in which these animals gained access to the bodies of those they inhabit, has been in some degree removed, and in the more complete history of their origin and modes of life, which is now being opened up, there are given confident grounds for hope that practical means may be suggested for their prevention and removal.

In the earlier part of the present century, previous to the recent

discoveries referred to, such was the imperfect knowledge possessed of the organization and habits of the entozoa in general, that by many physiologists of acknowledged learning and accuracy it was believed to be impossible to account for the production of these animals, by the supposition of their ova or young being derived from without, and it was held necessary to have recourse to the hypothesis of their taking origin, in the various seats of their parasitic habitations in the body of man and animals, by a primary or non-parental, or by the so-called spontaneous or equivocal generation. Analogy was, it is true, at all times strongly opposed to such a view; but still, even after it had been abandoned for almost all other animals, some naturalists still adhered to this hypothesis as absolutely necessary for the explanation of the production of the entozoa.

Between the years 1815 and 1840, however, numerous facts with regard to the sexual structure and functions of the principal entozoa were brought to light, which tended greatly to diminish the probability of this hypothetical view; and from that time to the present, the accumulating evidence in favour of the existence of sexual organs in all the entozoa which have arrived at a state of maturity, and of the production of all known forms of entozoa from fecundated ova, has become so convincing as to have caused the hypothesis of a non-parental or spontaneous generation to be entirely abandoned for these as well as for all other animals.

An excellent summary of the state of the evidence and arguments on this subject at the time, was given in an essay by Eschricht of Copenhagen, in Jameson's *Edinburgh New Philosophical Journal* for 1840. In this essay, Eschricht justly argued in favour of the sexual production of the entozoa, in a manner analogous to that of other animals, from—1st, the constancy of the forms of entozoa; 2d, the completeness of their organization in the mature state; and, 3d, the prodigious fertility ascertained to belong to the greater number in which the ova had been discovered. He argued farther in favour of the view that the ova or young of the entozoa must be introduced into their parasitic habitations from without, from—1st, the known contagious nature of helminthiasis in certain instances; 2d, its occasional epidemic prevalence; 3d, the restriction of some forms of entozoa to certain districts of country; and, 4th, the appearance of imperfect or larva forms in the blood-vessels and other parts of the organs of animals inhabited by the mature entozoa. And, lastly, he showed satisfactorily that the full explanation of the origin and entrance of these creatures into the bodies of man and animals is to be sought for in a more complete knowledge of their modes of reproduction, in the careful investigation of the metamorphoses of their individual forms, and in the observation of their transmigrations in various stages of their growth from one animal to another—from a free to a parasitic condition, or the converse.

I think it may be interesting to the reader to learn more particularly to what extent this explanation has been afforded in the case of some of the entozoa by more recent observations, and by various experiments of a novel and conclusive nature, which, within the last few years, have been performed by physiologists on this subject.

It appears necessary, in the first place, to point out the distinction between those entozoa which are known to be sexually complete, and a number of parasitical productions which have long been regarded as distinct animals, but which are destitute of sexual organs. All the sexually mature entozoa are known to inhabit either the alimentary canal of animals, or the cavities of the lungs, or some other parts in immediate or free communication with the external air; or, if only parasitical during the earlier period of their existence, they are ascertained to leave the body of the animal they have previously inhabited, and attain to maturity in the free state. The non-sexual entozoa, on the other hand, while parasitic, all live enclosed in cysts, situated either in the parenchyma of organs, or in close internal cavities, within secreting tubes, blood-vessels, &c. Now these last, or the non-sexual parasites, are all proved to be incomplete animals; that is, the embryos, larvæ, or earlier forms of entozoa, which attain to sexual maturity by migration from the place of their earlier abode, in some instances into the alimentary canal, pulmonary, or other open cavities of the same animal, but more frequently into those of different animals. In other cases, as already indicated, the larval entozoa leave their parasitic abode, and are developed to a state of maturity in the free or non-parasitic state, that is, in water, in earth, upon moist plants, or in other favourable conditions.

The cystic or vesicular entozoa, established by Rudolphi as a separate order of this class, belong entirely to the division of incomplete or larva forms, and some of them may probably be regarded rather as pathologically altered conditions of these organisms. But it has now been shown that many, and probably all, of these owe their origin to ova produced by entozoa sexually mature, which ova are capable of being developed, in some cases, directly, in others only by passing through the cystic or some other transitory stages, into the complete or sexual entozoa.

The cystic or vesicular entozoa are to be looked upon, therefore, only as incomplete forms of other entozoa, which have had, or must hereafter have, their places assigned to them in the zoological classification; and the order "*Cystica*" should no longer have a place in this class.

It would also be proper to distinguish, in a more accurate manner than has been previously done, between the cystic worms of a vesicular form, or what may strictly be called the vesicular entozoa, and those which, without having themselves the vesicular form, are enclosed in a cyst, and which ought to be termed the Encysted

Entozoa ; as it appears that many kinds of entozoa, round worms as well as others, are capable, in certain circumstances, of assuming the encysted condition ; and it is important to remark, that in all instances, the encysted entozoon has never been known to attain to sexual perfection, whatever its kind, and however full its growth may otherwise appear, so long as it remains within the cyst.

It appears, therefore, that all entozoa, however various their forms in intermediate stages of existence, come at last to acquire sexual organs, and exercise the function of sexual reproduction when they have arrived at maturity. The number of fecundated ova which most of them produce is enormous ; in a tape-worm, or ascaris, there are many millions. The process of fecundation, and the development of the embryo from the ovum, have been carefully observed in a considerable number of these animals. It is a remarkable fact, however, that the development of the ova rarely takes place in the same animal, or in the same part of an animal, in which the parasitic entozoon has passed its life, and has exercised the generative function : there is either migration from the parasitic to the free condition for a time, or from one animal to another, the free condition sometimes intervening, or the change of place may be from one part to another of the same animal. Some entozoa, known only as incomplete or immature animals in the parasitic mode of life, attain sexual maturity in the free state ; others, perhaps a greater number, after living free for a time, become sexually complete in the parasitic condition ; this is probably the case in the common ascaris.

The migrations, or changes of habitation of the entozoa, or their ova or embryos, appear to take place in a variety of ways : first, by their being passed out of the body of the inhabited animal along with the fæces or other excretions ; second, by their being introduced into the bodies of inhabited animals along with their food or drink ; third, by their directly piercing the integument or other tissues ; fourth, by their piercing the membranes and parenchyma, entering the blood-vessels, being distributed through them, and subsequently piercing their coats to attain other situations.

It is also important to notice that there is the greatest difference in the degree of complication of the process of formation among the different kinds of entozoa. Some of them are directly developed from their ova, without undergoing more remarkable changes than those which are known in many other animals usually to accompany the process of embryonic evolution. Other entozoa are subject to individual metamorphoses, or the embryo passes through successive stages of development of so remarkable a character, as to mask the regular sequence of the phenomena of progressive formation. There are others of the entozoa which are subject to still greater changes in the progress of their existence, changes upon which great light has recently been thrown in other

animals as well as in the entozoa, by the remarkable researches of Steenstrup and others, in regard to what has been called alternate generation or metagenesis. Thus some of the entozoa undergo that peculiar form of multiplication by a non-sexual process, in which the immediate progeny of development from the ovum is dissimilar from the parent, but produces, without the aid of sexual organs, another progeny, which either itself, or by repetition of an analogous process, returns to the parental form. This is a process of the nature of an internal or external gemination, which is often attended with a prodigious multiplication of the number of individuals. In some entozoa, again, metamorphosis and metagenesis are combined. It is obvious that the external conditions necessary to maintain these varieties of the vital states must be different.

As the number of ova produced by the sexual individuals of entozoa is in most of them enormous, and the number of adult individuals which inhabit other animals is comparatively small, it is obvious that a very large proportion of the ova or embryos produced must be abortive, or must never pass beyond the earliest stages of their existence; and it is, at the same time, to be kept in mind that some kinds of the entozoa, like many of the external parasites, very probably pass into aberrant forms, and that some also reach parasitic situations unsuited to their further progress. The introduction of the entozoa, then, into the bodies of other animals, though so far a natural process, and one which does not, when to a small extent, occasion serious inconvenience to the inhabited animals, may be looked upon, in some measure, as a fortuitous occurrence; a circumstance which, in our imperfect knowledge of the true relation of the different phenomena of organic nature, is apt to strike us as surprising, or, at least, as contrasting strongly with the great care in the preservation of ova and offspring generally provided for throughout almost all the rest of organic nature.

From what has now been stated, it is apparent that the following general conclusions result:—1st, That all the entozoa are produced, more or less directly, from fecundated ova, and that they afford no evidence, therefore, in favour of the hypothesis of spontaneous generation; 2d, That migrations are necessary, alike for the introduction of entozoa into the animals they inhabit in the parasitic condition, and for the occurrence of the series of changes by which they reach maturity; and, 3d, That, as the entozoa of several genera and species, previously supposed to constitute distinct animals, are now shown to be only the early or transitory states of those which reach maturity in other forms, a revision of the zoological arrangement of the members of this class is called for. This revision will have the effect of abolishing entirely the order of "*Cystica*," all of which are incomplete, and must affect, also, a considerable number of recognised genera and species in other

orders. But it is obvious that the zoological classification and enumeration of these parasites can only be complete, when the investigation of the mode of reproduction, the metamorphoses, the migrations and the modes of life of all their varied forms, have been exhausted; and when we consider the very different aspects which in successive stages some of these animals are capable of assuming, and the great and often unexpected migrations which they are liable to undergo, it will easily be understood that it may be long before the progress of discovery shall have enabled helminthologists to assign their right places to the different kinds that have been observed. What has already been done, however, has pointed out sufficiently clearly the direction which future inquiries must take in order to lead to a correct classification of the entozoa, founded on their internal organization and functions.

Among the recent authors whose researches and writings have contributed in the greatest degree to the establishment of the general facts now referred to, Von Siebold of Munich, probably the most learned helminthologist of our time, may be mentioned as holding a very prominent place; but, along with him, the names of Eschricht, Nordmann, Dujardin, Van Beneden, Blanchard, and Kuchenmeister, ought to be stated as having made many valuable additions to our knowledge of this class of animals. An admirable sketch of the present state of information on the subject, has been given in a small work recently published by Von Siebold, entitled, "On Tape and Vesicular Worms; with an introduction on the production of Entozoa."* From this, and from some other sources, I purpose to select some notice of the most recent and interesting discoveries that have been made by Von Siebold and by others.

From what has already been said, the reader will have inferred that the department of our subject on which the greatest amount of light has been thrown by recent researches, is that connected with the history of the origin and transformations of the Cestoid or tape-worms. Some very interesting facts have also been ascertained, however, with regard to the Trematode and Nematoid entozoa. To these last two orders I will refer shortly, before proceeding to state more in detail the observations and experiments relating to the Cestoid and Cystic kinds.

Nematoidea.—The round worms, among which I refer particularly to the *Ascarides* or allied genera, are all of separate sexes, and, in their mature state, inhabit the alimentary canal, or pulmonary tubes of man and animals. The ova are generally fecundated within the body of the female *Ascaris*, and, in circumstances favourable to development, the young are formed directly from the germinal part of the ovum by a process of great simplicity, which admits of easy observation.

* Über die Band und Blasenwürmer, nebst einer Einleitung über die Entstehung der Eingeweidewürmer, Von Carl Theodor Von Siebold, &c., Leipzig, 1854.

It is to be remarked, however, that the ova are seldom developed in the intestinal canal of the animal inhabited; and it is a fact worthy of notice,* that so long as the ova of some Nematoid worms remain in the intestinal mucus, they show little disposition to undergo development, while, on the contrary, the formation of the embryo proceeds with great rapidity when they are placed in water.

The source of the various *Ascarides* which inhabit the human intestine has not yet been fully ascertained; but many concurring circumstances tend to show that they are most frequently introduced, as minute embryos, along with water, or with fresh uncooked vegetable food, more rarely along with that of an animal kind.

I was recently made acquainted with an interesting observation bearing on this point, which was made some time ago by my friend Dr. Robert Paterson of Leith, and which, in the absence of more precise information and a fuller investigation of the subject, is worthy of being recorded. It is this, that in the town of Leith Dr. Paterson had found that, in a particular street, certain families who drew their water from the public well, placed at one end of the street, were very subject to be affected with the common *Ascaris lumbricoides*; while, towards the other end of the street, in which the water was supplied from the Crawley Spring, the inhabitants were free from the verminous affection. The water of the public well, it appeared, was derived from the small lake, named Lochend, in the neighbourhood, part of which is by no means clean, and there had frequently been remarked swimming in this water a number of small animalculæ, such as might be supposed to be the embryos of the *Ascaris*.†

It has been ascertained that the *Gordius aquaticus*, which is allied to the *Ascarides*—a long hair-like worm, familiarly known in pools of water—is in that state sexually perfect, and that it produces its young while inhabiting the water; but that it has previously, in its earlier embryonic condition, inhabited parasitically the abdominal cavity of beetles, grasshoppers, &c., enclosed in cysts, and without the possession of the sexual organs, which are only developed when it passes into the free mode of life.

The manner in which the young of such entozoa may gain access to their parasitic habitation, is well illustrated by some observations made by Meissner and Von Siebold on an allied genus, the *Mermis albicans*. The young of this Gordian entozoon inhabit the abdominal cavity of certain caterpillars, enclosed in cysts, and destitute of sexual organs. When approaching maturity, these worms leave the bodies of the caterpillars, making a

* Observed by Ercolani and Louis Vella, see Ann. des Scien. Nat., 1854.

† Dr. Paterson has not yet had the opportunity of following out all the details of this very interesting observation, which seems to point out a subject of investigation likely to be attended with fruitful results.

passage for themselves through the walls of the abdomen; they then remain for a considerable time living in the moist earth near the plants on which the caterpillars had been feeding, and there reproduce their young. The embryos of the Mermis, when still very small, penetrate the bodies of the young caterpillars, boring through the abdominal wall, and thus attain their first or parasitic abode.

The Guinea worm (*Filaria medinensis*) has recently been shown by Mr. Busk* to pass through several changes of form before it reaches maturity in the human body. It is generally believed to penetrate the tissues, and establish itself, in the encysted condition, in the subcutaneous substance. From a statement made by Eschricht, it would appear that this entozoon may remain a very long time before being developed, as he relates the case of a boy, in Copenhagen, in whom the worm only became apparent two years after he had left the coast of Africa, where no doubt he had received the germs or embryos of the parasites.

A considerable number of instances of encysted round worms have now been observed. Thus, the common mole is infested by an immature *Ascaris* (*A. incisa*), which inhabits the peritoneal cavity, enclosed in small membranous cysts, which are attached by short pedicles to the surface of the intestine and other viscera. A remarkable example of an enclosed immature round worm is not unfrequently observed in the horse, in a mass of immature non-sexual worms of the genus *Strongylus*, situated in an aneurismal dilatation of the principal mesenteric artery. These worms appear to be the embryo, or young state, of the mature *Strongylus armatus*, which inhabits the alimentary canal of the same animal. The *Strongylus inflexus*, which, in its mature state, inhabits the bronchia of the lung of the porpoise, is found, in its earlier and imperfect form, in the encysted condition, and its embryos have been also observed in the blood-vessels of the same cetacean.

In some instances, it is probable that among the Nematoid entozoa, the change from the encysted to the open mode of life takes place by migration from one animal to another. Thus, the imperfect round worm, *Ascaris incisa*, already referred to as inhabiting, in cysts, the peritoneal cavity of the mole, is never found in that animal in the mature condition; and it is probable that it only attains to its mature form by passing into the alimentary canal of some other animal which preys upon the mole, and consumes it for food.

The encysted *Filaria piscium*, which is common in the peritoneum and other organs of fishes, is probably the young of a sexual *Ascaris*, which inhabits the intestine of seals, cormorants, and predacious fishes, feeding upon those fishes in which the immature worms have had their previous abode. The minute *Trichina spiralis*, which has now been repeatedly found, in large numbers,

* Trans. of the Microscop. Soc., vol. ii.

encysted in the muscular substance of man and animals, appears to be an imperfect animal, and probably the early stage of a Nematoid worm. Its development does not, in the muscles, appear to advance beyond a certain point; and it rather seems disposed to undergo a retrograde change, or to become abortive in these situations. Farther observations are required to indicate the source from which the ova or embryos of the *Trichina* are derived, as well as to point out whether they belong to any other known *Ascaris*, or other round worm, and in what situations this form of it arrives at sexual completeness. An experiment of Herbst, relating to this entozoon, is deserving of being mentioned in this place. Finding that the muscles of a badger, which had lived in his anatomical establishment for some time, were affected with the *Trichina*, he caused two young dogs to be fed with a part of the flesh of the badger; and he found, on examining them some time afterwards, that the whole of their muscles were beset with the *Trichina*. It does not appear clear how this transmission had occurred, but it is probable that the *Trichinæ* of the badger's flesh, on being taken as food by the dogs, were freed from their cysts by digestion (as we shall see to be the case with other entozoa), and attained sexual maturity in the alimentary canal of the dogs, whence the embryos developed from the ova had penetrated into the blood-vessels and muscular tissues. With regard to this, however, farther observations will be required.

Several circumstances appear to show that the young of some of the round worms, as well as of other entozoa, may, when once introduced into the body of an animal; reach the seat of their parasitic habitation in the close parenchyma of its organs by means of the blood-vessels. That the young of a number of entozoa are capable of piercing the tissues of animals, has now been proved by a variety of observations, more especially on the Trematode and Cestoid worms; and although there are wanting equally direct observations on the Nematoid worms, it is extremely probable that the same occurs with the embryos of a certain number of these entozoa.

Various observations made by Schmitz, Baer, Valentin, Remak, and others, between the years 1826 and 1842, had shown the existence of filaria, trematode, and infusoria-like animalcules, or larvæ, in the blood of several animals; such as frogs, some fishes, and mollusca. In 1843, Gruby and Delafond observed a large number of filaria-like worms in the blood of dogs, and since that time they have confirmed and extended their observations in an interesting manner.* By these and other observations, it has been ascertained that such Hæmatozoa exist in the blood of various animals besides the dog, in which they are quite common; viz., several kinds of rats, various birds and fishes, in the crab, river mussel, earth-worm, silk-worm, &c. It has not been ascer-

* See Comptes Rendus for 1852, p. 9.

tained that these minute entozoa attain to any farther stage of development in the blood; but it can scarcely be doubted that the blood-vessels must serve as very ready channels of distribution for the minute embryos of various forms of the entozoa to other parts of the bodies of animals.

Trematoda.—Most of these entozoa are, in the mature state, hermaphrodite, the ova being fecundated in each individual. In a few only has the process of development of the embryo been traced. In some—those, viz., with large ova—this process appears to be simple and direct; in others, having small ova, it is complicated, and is attended with great metamorphosis of structure, and more than one change of habitation or migration.

The first observations bearing upon the metamorphosis of the Trematoda were made about the years 1818 and 1820, by Bojanus and Baer, in connection with small and imperfect worms (*Cercariæ*), belonging to this order, which commonly infest the water-snail. These observations were, however, of so isolated a character, that they did not lead to any general conclusion as to the reproduction of the Trematoda, but at first rather appeared mysterious and inexplicable. The incomplete embryos or larvæ of certain Distomata had thus long been known as *Cercariæ*, when, towards the year 1842, further observations brought to light other phases of their existence. The *Cercariæ* are small active caudate animalcules, which were perceived in great numbers in the water, near and upon the bodies of some species of *Limneus*. It was observed that they made their appearance by issuing from the bodies of the water-snails, and, after swimming actively in water for a time, they settled upon and pierced the bodies of water insects, so as to establish themselves in their substance. There they became encysted, lost their caudal appendage, and underwent other changes, by which they were gradually converted into Distomata. In the encysted condition, these creatures never reached sexual maturity, but in all other respects were found to correspond exactly with some perfect Distomata, known to inhabit various water fowls, fishes, and other vertebrata, which made prey of the water insects and snails. The manner in which the *Cercaria* animals are descended from the Distomata formed the subject of farther interesting observations by Steenstrup, Von Siebold, and others; but it cannot be regarded as having yet been fully explained. It appears that the *Cercariæ* are not formed directly by development from the ova of Distomata, but are produced by a non-sexual process of multiplication from a peculiar body, which may be termed the Sporocyst or *Cercaria-case*. In some instances, these sporocysts are no more than living bags, within which the *Cercariæ* are developed by internal gemmation; in other instances, they have more or less of the form, internal structure, and motions of independent animals. It appears, too, that the sporocyst, which gives birth to the *Cercariæ*, is not the

immediate descendant from an ovum, but may be formed by multiple internal gemmation from a body of a similar nature with itself. But the origin of the first sporocyst has not yet been fully ascertained. An observation of Von Siebold's, made on the *Monostomum mutabile*, an animal of an allied kind, seemed to give the clue to the explanation; but farther researches will be required to determine directly the manner in which the ova of the Distomata are developed. In the meantime it is sufficient to state, that in the *Monostomum mutabile*, Von Siebold found that from the ovum there was first developed a ciliated animalcule or embryo, and that, secondarily, within this there was produced a body corresponding very closely with some of the sporocysts, of which the successive progenies had been traced into Distomata. Should the view taken of this process by Von Siebold be correct, which is still doubted by some, the successive stages of development and transformation in these Distomata may be shortly stated thus:—

1. Fecundated ovum of Distoma.
2. Ciliated embryo, developed from the ovum.
3. Sporocyst, or Cercaria-case. 1st series, 2d series, &c.
4. Cercariæ.
5. Encysted Cercaria, or Distoma larva.
6. Perfect or sexual Distoma.

These views may possibly be modified by future inquiries, and there may be various other modes in which the Distomata are developed; but enough has been already ascertained to show that some genera of this order of entozoa are subject to very remarkable metamorphoses, as well as, in some instances, to multiple metagenesis; and that, as these changes are accompanied with repeated migrations, the explanation of the entrance of the Distomata, and other Trematodes, into the bodies of the animals which they inhabit parasitically, is extremely difficult, and will require a long and laborious investigation.

The Hepatic Fluke, which occasionally is found, as a parasite, in man, but which more frequently attacks the lower animals, is well known, from the great ravages which in certain seasons, and in some districts of country, especially marshy ones, it produces among sheep and cattle. The exact manner of the introduction of these entozoa into the bodies of sheep is not fully known; but the belief prevails universally among those who have witnessed the affection in flocks, that they are derived from the herbage on which the sheep have grazed. And it is a well-known precaution among the shepherds, in those districts in which the affection is liable to occur, not to allow the sheep to go upon the pasture ground till after the morning dew has been dried from the grass. In certain marshy districts of Tuscany, where the sheep are extremely liable to this affection, it has attracted considerable atten-

tion, and the general belief prevails that the larvæ, or young of the fluke, are derived from the grass, or from water near it.

3. *Cestoid, or Tape-Worms*.—There are four principal kinds of these entozoa; viz., 1. Those similar to the common tape-worm, or *Tænia solium*, or solitary tape-worm of man. 2. Those of the nature of the *Bothriocephalus latus*, or broad tape-worm, which occurs in the human body in eastern Germany, Russia, &c. Species of both of these genera are also common in Mammalia. 3. The *Rynchobothrius*, and its incomplete form, the commonest of which is known under the name of *Tetrarhynchus*, principally met with in fishes. And, 4. *Ligula*, or undivided tape-worm, occurring also in fishes in its imperfect state, and in its mature state inhabiting water-fowls, and other vertebrate animals which prey upon fishes.

In the three first of these families, which are all more or less jointed in their mature state, each joint is of hermaphrodite structure, or contains at once male and female reproductive organs, and produces fecundated ova. In *Ligula*, which is also hermaphrodite, these organs are repeated in several sets along the body, but without manifest division into segments. In all of them the ova are fecundated before being discharged, and may often, in the common *Tænia*, be perceived to have undergone the first stage of their development before they are excluded. In the common tape-worm, while the head continues to adhere, by its circle of hooklets and oscula, to the mucous membrane of the intestine, the last or caudal joints, when they have arrived at sexual maturity, are separated one by one, or in numbers together, and new joints are, at the same time, gradually formed towards the head. After living for some time, which is very variable in different instances, in this condition, and having produced often a very large number of joints, and an enormous quantity of ova, the existence of the parasitic animal is terminated by the separation of the head from its attachment to the intestinal membrane. When this separation occurs naturally, it appears probable that the circle of hooklets has been lost, indicating the natural term of its existence.

It is only in the alimentary canal of animals that the Cestoid entozoa attain to sexual maturity. Many of them pass the earlier stages of their existence as encysted parasites, and a few even acquire the jointed form, or become partially divided into segments, while still within their close cysts. A well-known example of this, in the *Tænia fasciata*, or *Cysticercus fasciolaris*, inhabiting cysts in the liver of the rat and mouse, has been the means of leading Von Siebold and others to a discovery of the remarkable relation now proved to exist between the Cystic or Vesicular entozoa and the Cestoid or Tape-worms. These entozoa are found in the liver of the mouse and rat in every stage of development, from the simplest vesicular form of the true *Cysticercus*, to that which, from the number and external form of the joints, has all the ap-

pearance of a true tape-worm, from which, in fact, it only differs in the absence of sexual organs within the joints. A careful comparison of the form of the head, its circle of hooklets, the four oscula or suckers, and other parts in the *Cysticercus* of the rat or mouse, with those of the *Tænia crassicolis* commonly inhabiting the intestine of the cat, has shown an exact resemblance between them. In fact, no difference whatever is perceptible, excepting in the absence of the sexual organs in the most developed examples of the *Cysticercus fasciolaris*, and in the last joint having still appended to it the caudal vesicle belonging to the *cysticercus* condition.

Dr. Henry Nelson made the same observations, without a knowledge of Von Siebold's views, and I repeated them with the same result; and Dr. Nelson came to the same conclusion, now generally regarded as established, that the cat receives its *Tænia crassicolis* along with the flesh of the mouse or rat of which it has made prey.* The *cysticercus* head and body, resisting the action of digestion in the stomach of the cat, are freed from its cyst, and then becoming attached to the mucous membrane of the cat's intestine, its segments undergo their full development, and acquire the sexual organs.

There are a number of other instances in which it has now been made extremely probable, that the various perfect *Tæniæ* of carnivorous or predaceous animals are introduced into their alimentary canal along with their food, consisting of the flesh of other animals, in which the larvæ or younger encysted forms of these *Tæniæ* have existed in the parasitic condition. Examples of this have been particularly noted among fishes and aquatic animals. Thus, the complete sexual *Rhynchobothrius* inhabits the intestine exclusively of predaceous fishes, such as the shark or skate, while the *Tetrarhynchus*, or incomplete stage of the same kind of Cestoid, inhabits a variety of other fishes, the cuttlefish, &c., on which the shark and skate prey. The common stickleback, *Gasterosteus*, is infested with an incomplete or non-sexual tape-worm, which lives in the encysted condition in its peritoneal cavity, and this parasite assumes the complete and sexual form in the intestine of various water-fowls which prey on the stickleback, constituting in them the *Bothriocephalus nodosus*, or *Schistocephalus dimorphus*. In the same manner, the *Ligula simplicissima*, inhabiting the abdominal cavity of the carp, seems to be the undeveloped form of the sexually complete *Ligula* which occurs in the alimentary canal of geese, divers, herons, and other water-fowls. Again, the *Triæno-phorus nodulosus* is incomplete, as it inhabits, in the encysted condition, the peritoneal cavity and liver of the trout, and becomes sexually complete only in the alimentary canal of the pike and perch. It seems certain that the ova of this *Tænia* do not un-

* See notice of this fact in the article "Ovum," in the *Cyclopædia of Anatomy and Physiology*, appendix.

dergo development in the alimentary canal of these predaceous fishes, and we must conclude that they are passed out of their bodies with the fæces, and undergo the first stage of their development, either free in water, or in the encysted condition in the organs of those fishes which fall a prey to the pike. In passing along with food into the alimentary canal of the pike or other predaceous fishes, the young or larva-tæniæ are set free from their cysts by digestion, and afterwards attain to maturity in the favourable conditions presented by their new host.

Adopting the view suggested by these and other instances, that the development of the tænia-like entozoa generally requires their parasitic residence in more than one state in different animals, it is obvious that the migrations by which they reach the situations favourable for their evolution are of two different kinds; the one set being along with food, from the larva or earlier condition, to the alimentary canal of the animal in which full maturity is attained; the other set being that of the ova, or of very small embryos into the body, close cavities, or solid substance of the first host, in which the encysted condition is passed through.

The development of the majority of the tænia-like worms is attended with remarkable metamorphoses, and has been observed with the greatest accuracy in the *Tænia* of fishes, which are of the *Tetrarhynchus* or *Rhyncobothrius* kind, more especially by Van Beneden, as described in his interesting memoirs on the Cestoid entozoa.* Our space here does not admit of my describing this process at length, but, for the right explanation of the facts immediately to be related, it is necessary for me to state very shortly its general nature.

Within the fecundated ovum of the *Tænia*, the first process of development gives rise to a small embryo of the simplest structure, consisting of little more than a highly contractile vesicle of the same size as the yolk of the ovum, on one side of which are placed three pairs of hooklets, one pair looking forwards, and the other two pairs placed one towards each side, or at right angles to the anterior pair. The second stage of development consists in the formation, from a determinate part of the first or hexacanth embryo, of a head, with proboscis, a circle of hooklets, and four oscula, precisely as in the head of a *Cysticercus*, or *Echinococcus*, or *Tænia*. The body remains as yet without segmentation, having the form of a more or less elongated vesicle, upon which, at first, there are sometimes to be perceived the remains of the three pairs of primary hooklets. This second embryo is the form which in the *Tetrarhynchus* tribe has received the name of *Scolex*, and it has been proposed, therefore, to call the first *Proscölex*. It is this *scolex* which so frequently becomes encysted. The third stage in the natural progress of the *Tænia* is the formation of segments, or the change of the *scolex* into a compound animal, which, if we

* *Memoires de l'Acad. de Bruxelles*, 1852.

adopt a term from the multiple polype stock of the Medusa, may be termed the Strobila. The entozoa in this stage may or may not be encysted; but the joints are not yet complete, as they do not yet possess the sexual organs. The formation of these last within each of the segments, which only takes place when the Tænia has passed into the alimentary canal of its proper host, and the separation of the perfect joints, are the last stages of this process of development.

There are many varieties in different Tæniæ, in regard to the number of joints formed before and after sexual maturity has been attained, and also in the form of these joints, and in the degree of perfection of their organization before and after separation. In some Tæniæ, the separate segments exhibit some points of structure, motion, and other phenomena resembling those of independent life; and many naturalists are disposed to look upon them as distinct individuals, formed by a non-sexual process of multiplication on the Tænia stock. The name of Proglottis, following Dujardin, has been applied to each perfect joint when separated.

Without entering, however, into details, as to which there are considerable varieties among the different kinds of Tæniæ, the following may be stated to be in general the several stages of progression of a Cestoid entozoon, viz. :—

1. Fecundated ovum.
2. First or hexacanth embryo, with three pairs of hooklets; Proscölex.
3. Second or cyclacanth embryo, with circle of hooklets and oscula; Scolex; often encysted.
4. Incomplete segmented Tænia; Strobila.
5. Complete sexual segments, each being hermaphrodite, and tending to separate; Proglottis.

There are not wanting observations, also, which illustrate, in a clear and interesting manner, the process, hitherto inexplicable, by which the Proscölex, or first Tænia-embryo, gains a passage through membranes, walls of vessels, and solid textures of animals, so as to reach its encysted situation. The researches of Stein* on this point are particularly interesting. They were made on Tænia-embryoes from the stomach of the larvæ of *Tenebrio molitor*, or meal-worm, which he found in every stage of progression from the cavity of the stomach, through its coats, into the abdominal cavity. The Tænia-embryo makes its way by a peculiar succession of movements of its body and hooks, which may be easily observed. In this the three pairs of hooklets are first brought close together while the animal advances and pierces the tissues, and then the lateral pairs of hooklets are bent backwards to their rectangular position, so as to secure the farther advancement, and by a rapid

* Zeitsch. für Wissen. Zool., vol. iv., p. 207.

repetition of these successive motions, the minute and apparently delicately-formed embryo forces its way through the substance.

From these and other observations, afterwards to be referred to, there can be no doubt that the first embryo from the ovum of the *Tænia* is capable of passing readily through the entire softer tissues of animals, so as to reach those deeper and close situations in which they afterwards become encysted.

4. *Cystic Entozoa*.—I have already remarked that the Cystic or Vesicular worms have recently been shown to be, not complete animals, as was previously supposed, when they were arranged by Rudolphi under a distinct order of the class Entozoa, but only immature, and in some instances aberrant, and even pathologically altered forms of the earlier stages or larvæ of different kinds of *Tænia*. The Cystic entozoa all inhabit the close cavities of animals, or are enclosed in cysts in the more solid parenchyma of their organs. They correspond in some measure with the Scolex, or second stage of a Cestoid entozoon, or they consist of a *tænia*-head, provided with the same circle of hooklets and four oscula, and this head is united by a neck to a vesicular body of variable size. Of the three forms familiarly known, the *Cysticercus* possesses only a single head on an entire vesicular body. In the other two genera of *Cænurus* and *Echinococcus* the heads are numerous, having undergone considerable multiplication by a process of non-sexual gemmation; in the first, the heads projecting on the exterior of the common vesicle; in the second, towards its interior. The vesicle, at the same time, undergoes a great enlargement in both, and thus may be the means of inducing extensive pathological changes in the organs in which it is situated. The *Echinococcus* differs also from the *Cænurus* in the circumstance, that after a time the budding heads come to be separated from the parent individual, and afterwards remain suspended and alive within the fluid of the vesicle, in a form not more advanced than the Scolex, or second stage of the *Tænia*-embryo; in truth, it is like a *Cysticercus* with a proportionately small vesicle.

Relation between Cystic and Cestoid Entozoa.—The most novel and remarkable facts to which I have now to direct the reader's attention, refer to the conversion of these various kinds of vesicular entozoa into tape-worms, when they are placed in the appropriate conditions for the attainment of this stage of development, as ascertained by experiments which have recently been performed on a variety of animals, and in one instance also on the human body. These experiments all consist more or less in observing the effects of feeding an animal which it is designed to affect with the entozoa with their ova or larvæ. The first experiment of this kind with which I am acquainted was performed by Dr. Kuchenmeister of Littau, in 1851, who, having caused young dogs to eat along with their food a number of the *Cysticercus pisiformis* of the rabbit and hare, found that after some weeks these were con-

verted, in the intestine of the dogs, into the *Tænia serrata*. Similar experiments were subsequently performed by Lewald, under Von Siebold's direction, and later they were repeated by Van Beneden, and by Kuchenmeister himself, with the same result.

The following is a short notice of the most important of the experiments devised and performed by Von Siebold, as described by him in his Essay on Tape-worms before referred to:—

*First Series.**—Ten young dogs were fed with the *Cysticercus pisiformis* from the rabbit, and being killed and opened at different successive periods afterwards, the gradual progress of the conversion of the *Cysticerci* into *Tæniæ* was carefully observed in their intestines. It appeared that, by the action of the gastric fluid in digestion, first the cyst and then the caudal vesicle of the *Cysticercus* were dissolved in the dog's stomach; but the head and neck, resisting entirely the solvent action, passed into the duodenum. Here they soon became attached to the mucous membrane; and after a short interval of only two or three days, they were seen to enlarge, the head and neck undergoing little change, but the body elongating, and very soon the transverse grooves appearing, which afterwards becoming more marked, divide the body into its segments. In less than two months these *Tæniæ* had attained a length of ten and twelve inches, and in three months they were from twenty to thirty inches long, and the reproductive organs were fully developed in the last or caudal joints, which now began to separate as the proglottides.

The most common tape-worm of the domestic dog is the *Tænia cucumerina*, with oval-shaped segments; it is only when it has access to the rabbit or hare as food that it acquires the *Tænia serrata*, with angular segments, and accordingly this last more frequently affects hunting dogs. Von Siebold ascertained that in other young dogs in the same circumstances, but which had not received any *Cysticerci*, no *Tænia serrata* was found, and it was fair to conclude, therefore, that the embryos of the *Tæniæ* had, in the first set, proceeded from the *Cysticercus*.

Second Series.—These experiments were made by feeding young dogs with the *Cysticercus tenuicollis*, which is common in domestic cattle, and of which the vesicle often attains a large size. Having found that the vesicle was invariably destroyed by digestion, V. Siebold contented himself thereafter with giving the heads only, or scolices, to the dogs, removing artificially the vesicle. Six young dogs were the subjects of this experiment, which was conducted in a manner similar to the first, and with the same result of the formation of tape-worms, which reached their full development in forty-eight days, and corresponded exactly with *T. serrata*.

* These experiments were first described in Lewald's Inaug. Dissert. (Berlin, 1852), and in the *Zeitsch. für Wissen. Zool.*, vol. iv., p. 400.

In a fox which was fed upon the same *Cysticerci*, no *Tæniæ* were found.

Third Series.—In this set of experiments, the *Cysticercus cellulosæ*, from the flesh of the hog, was employed. Four young dogs received, at different times, a number of these *Cysticerci* along with their food, and on being opened at different intervals afterwards, there were found in their intestine, in various stages of advancement, corresponding to the length of time that had elapsed, tapeworms which resembled exactly the *Tænia serrata*. V. Siebold was struck with the close resemblance of this *Tænia serrata* of the dog to the common *Tænia solium* of man, and after an accurate comparison of various examples of these entozoa, concludes that they are identical, and not to be specifically distinguished, or that at most they are varieties of the same species dependent only on the difference of their parasitic habitations.

Fourth Series.—This series of experiments was performed in the same manner as the last, but with the heads or scolices of the *Cænurus cerebralis*, the entozoa so well known in connection with the disease of sturdy and staggers, which it produces when infesting the brain of sheep and cattle. In order that the *Cænurus* might be procured alive, the dogs experimented on were carried to a part of the country where a number of sheep were affected with the sturdy. In the intestine of five out of seven dogs fed with the *Cænurus*, great numbers of *Tæniæ* were found, at successive periods, in different degrees of advancement; in thirty-eight days the *Tæniæ* had arrived at maturity, and appeared, like those in the previous experiments, to correspond exactly with *T. serrata* and *T. solium*; in two other dogs the experiment was rendered nugatory by the dogs being ill of distemper at the time.

Fifth Series.—The last of the experiments related by V. Siebold were made with *Echinococcus animalcules* (*E. veterinorum*) of domestic cattle, which is probably not specifically different from that of man. As many as twelve young dogs, and also a fox, received a quantity of the small echinococci in milk, and on being examined at various periods from the commencement up to twenty-six days, there were found, in all different stages of development, a small *tænia* totally different from any observed in the previous experiments, or indeed from any one accurately distinguished or described by helminthologists. This V. Siebold proposes to call *Tænia echinococcus*. It is remarkable for its very small size, and for the small number of its joints, which never amounted to more than three, and for the circumstance that the reproductive organs, which are confined to the two last joints, become perfect, and the caudal joint separates as a proglottis at a very early period.

From these experiments, therefore, it appeared that all the vesicular entozoa, *Cysticercus*, *Cænurus*, and *Echinococcus*, are capable of being converted, on being transferred into the alimentary canal of a suitable animal, into *Tæniæ*; that the *Tænia* thus produced

From several recognised species of *Cysticercus* and the *Cænurus cerebralis* were identical, but that from *Echinococcus* a different *Tænia* was developed. Von Siebold holds it as probable that several other *Tæniæ*, distinguished by helminthologists as of different species, are only varieties of the same, and analogous to *Tænia serrata*.

After the foregoing results had been obtained and confirmed in farther experiments by Kuchenmeister and Van Beneden, it was extremely interesting to find that the converse kinds of experiments were attended with equal success—that is, that the formation of *Cænurus* and *Cysticercus* takes place in animals in consequence of their being fed with the segments of tape-worms containing the ripe ova.

Kuchenmeister, having previously caused the production of the *Tænia serrata* in a dog by feeding it with the *Cænurus cerebralis* from a sheep, gave to young lambs some of the ripe joints or proglottides of this *Tænia*, and by the fifteenth day the usual symptoms of sturdy began to appear in the lambs. Kuchenmeister sent some of the same *Tænia* to Van Beneden at Louvain, to Eschricht at Copenhagen, and to Leuckart at Giessen, all of whom, in separate experiments, caused lambs in the same manner to take the *Tænia* joints along with their food, and in all the cases the same result was found to be produced, in the occurrence of the symptoms of sturdy at a period of from fifteen to eighteen days after the *Tænia* joints were given to them. The same experiment had likewise been performed by Dr. Haubner of Dresden, with the same result.

Several of these experimenters, having examined carefully the lambs so affected, were able to detect the progressive stages of formation of the *Cænurus* in the cortical substance of the brain, where alone these entozoa seemed to attain the true *Cænurus* form. There were abundant traces of them in the heart, diaphragm, and other muscles, and also, in some of the experiments, under the skin; but in these situations they appeared to be abortive, while in the brain they gradually increased in size, and, in some instances, the vesicle had attained the size of a hazel-nut. The brain was, in all instances, marked with inflamed grooves over its surface, indicating, probably, the track of the *tænia*-embryoes; for at the end of each of these tracks, in the early stages, were found the minute *Cænuri*.

Another confirmation of the fact of the conversion of the ova of *Tænia* into cystic entozoa has been afforded by an experiment of Leuckart's, which merits separate mention here. It gives also the complement of the relation between the *Cysticercus fasciolaris* of the mouse and the *Tænia crassicolis* of the cat. Having in his possession a family of white mice, which he had employed for various experiments, and in none of which had the *Cysticercus* of the liver been perceived, he gave to six out of twelve, along with

their food and drink, the ova of the *Tænia crassicollis*, obtained by breaking up the ripe joints or proglottides of this tape-worm from a cat. Four months afterwards he found, on opening these mice, that four of them were affected with the *Cysticercus fasciolaris* of the liver; and he ascertained that in none of the mice which had not received the *tænia*-ova was there any production of these entozoa.

The last experiment to which I shall refer may, by many, be looked upon as the most interesting of all, and we owe it again to Dr. Kuchenmeister.* Having the opportunity of repeating on a condemned criminal the experiments which he had previously performed on animals, Dr. K. contrived to give to this man, at seven successive times, between 130 and 12 hours previous to his execution, mingled with various articles of food, a number of *Cysticerci* from the hog and some from the rabbit. On examination after death, a number of young *Tæniæ*, in different stages of advancement, were found in the intestine; the greater number of them loose, but a few attached to the mucous membrane. The form of the hooklets, and other circumstances, induced him to regard these tape-worms as the usual *T. solium*. There were no traces of the *Cysticerci* last swallowed, and Kuchenmeister was of opinion that those only which were first taken, and which were quite fresh, had been converted into *Tæniæ*, and that those taken later, being dead, had been digested along with the food.

In the same communication, Kuchenmeister adds that, by his own experiments, and those of Van Beneden and Haubner, it is now proved that the *Cysticercus cellulosæ* may be produced in great quantity in hogs by feeding these animals with ripe joints of the *Tænia solium*; but that this does not occur either in the dog or sheep. He mentions also that he has not succeeded in obtaining the *Cysticercus cellulosæ* by feeding animals with the *Tænia serrata* vera, nor with the *Tænia* of the *Cysticercus tenuicollis*, nor of the *Cænurus*, nor *Echinococcus*, while these *Tæniæ* are all readily obtained by feeding animals with the *Cysticercus pisiformis*, and *C. tenuicollis*, and *Cænurus cerebralis*.

Many interesting subjects for remark suggest themselves in connection with these experiments, but it would prolong this paper too much were I to pursue the subject farther at present.

From the whole series of observations and experiments shortly referred to in the previous pages, the general conclusion may be drawn, that, while much probably remains to be done in the details of the subject, a most important advance has, through their means, been made in the explanation of the manner in which entozoa gain access to the seat of their parasitic habitations. It appears by them to have been ascertained—1st, that entozoa are

* I quote from the *Union Médicale* of 21st April, 1855, p. 193, in which the account is extracted from the *Wiener Medizin. Wochens.*, No. 1, 1855.

always introduced into animals from without; 2d, that some obtain access to the body of animals from water, or other matters, in which they have previously lived in the free condition, while others are taken along with animal food in which the entozoa have lived parasitically; 3d, that entozoa, when reaching sexual perfection in their parasitic condition, require to be in a situation which communicates with the external air, their most common position being the alimentary canal, and more rarely the pulmonary cavities; 4th, that all the entozoa inhabiting close cavities, or encysted, in the bodies of animals, are only imperfect and earlier forms of other entozoa, which may attain maturity in the open cavities of the same or of different animals, or in the free condition; 5th, that entozoa rarely propagate themselves in the same animal in which they have arrived at sexual maturity, but require a different habitat, which they reach by migrations in the various modes before referred to; 6th, that the cystic entozoa are the imperfect states of different Tæniæ; 7th, that full-grown Tæniæ are almost invariably introduced, in their earlier condition, into the bodies of animals along with flesh or other animal food; 8th, that, if the ova of Tæniæ be introduced into the alimentary canal of a suitable animal, their tendency is, by penetrating the tissues, to become encysted, and to assume the form of a cystic entozoon, such as *Cysticercus*, *Cænurus*, or *Echinococcus*; 9th, that, if these cystic entozoa again are taken by certain animals along with their food, the head part (which corresponds with that of a Tænia) resists digestion, and has a tendency to establish itself and become developed into some form of Tænia in the alimentary canal, by attachment to the mucous membrane, and by the formation of segments.

There can be no doubt whatever, that the occurrence of tape-worm in the human subject, as in animals, is dependent on the introduction into the alimentary canal of the *Scolex*-larva, accidentally or along with food. The most frequent, though not the only, source of these *Scolices* in this country and a part of the continent of Europe, is probably the *Cysticercus cellulosæ* of measly pork, when this is used in a partially cooked or raw state. This accords with general belief, and with what has been ascertained in a number of instances of persons affected with tape-worm, viz., that they had been in the habit of eating raw or imperfectly-cooked meat. In Abyssinia, where this habit prevails to a great extent, the inhabitants are well known to be remarkably subject to tape-worm; indeed, in that country the affection is looked upon as entirely a natural one.

The difference in the prevalence of *Tænia solium* in this country and in western Europe, and of the *Bothriocephalus latus* in the eastern division of the Continent, is well known; but I am not aware whether any observations have yet been made upon the most probable source of the latter entozoon. In Russia, however,

where the *Bothriocephalus* is the usual tape-worm, it has been found that the long-continued use of an exclusively animal diet, such as is recommended for the cure of some diseases, has been followed by the occurrence of the *Tænia solium*. In Switzerland, also, in the eastern parts of which the *Bothriocephalus* prevails, it has been observed that the hogs are rarely, if ever affected with the *Cysticercus*; but occasionally pork is introduced from France strongly tainted with this affection, and this may account for the occasional occurrence of the *Tænia solium*, especially in western Switzerland.*

These circumstances seem to point out very clearly the means to be adopted for the prevention of this troublesome complaint. At the same time, it is probable that there may be other accidental means by which these larvæ of the tape-worm may be introduced; and it will be easily understood how this may more particularly happen in the cases of butchers, cooks, or others in the habit of handling affected meat.

The instances in which the human body is affected with the *Cysticercus*, or other cystic entozoa, though not very rare, are by no means so frequent as those of tape-worm; but they are much more serious in their effects, more obscure in their origin, and in the meantime, therefore, more difficult to prevent. Scarcely any attention has yet been given to the source from which the various cystic entozoa infesting the human body may have derived their origin; but the observations already referred to make it extremely probable, that the explanation of their introduction is to be sought for in the same causes which have been shown to operate in the lower animals. Thus it appears to have been demonstrated that the *Cænurus* of the sheep proceeds from the ova or first embryos of *Tænia*, and it is most probable that these are obtained from the dog. The only mode, therefore, of removing this affection from a flock in which it may have become prevalent, and in which it is well known sometimes to cause very great losses, must be the careful separation of the dog from the sheep for a certain time; for such time, indeed, as that the dog shall find no more *Cænuri* in the offal, &c., of the sheep, in eating which it receives the larvæ of its *Tænia*, and that the dog being free from this *Tænia*, shall not furnish the ova or embryos, which being taken accidentally with the pasture or water by the sheep, establish themselves in them as encysted *Cænuri*. V. Siebold states the important fact, that those flocks which

* See the notice of a case, in which it appeared that the abstinence from the practice of eating raw meat during some time, effected a cure of inveterate tape-worm, with which a person had been for long affected, in the June number of the *Edin. Monthly Jour. of Med.* for the present year. A gentleman of my acquaintance, who has long been affected with a very large and inveterate tape-worm, informs me, that formerly he was in the habit of taking animal food very imperfectly cooked.

are entirely without dogs, and are stall-fed, are never affected with the sturdy.

A remarkable example of the prevalence of cystic entozoa in the human subject is mentioned by Von Siebold, as having recently been described by Dr. Schleisner, in his "*Medical Topography of Iceland*," published in 1851. It appears that the people of that country have been for some time suffering, to a great extent, under a very remarkable hydatid disease. The hydatids affect the liver, peritoneum, and subcutaneous texture. Eschricht writes to Von Siebold, that this disease has extended itself to such an alarming degree, about a sixth of the whole population being affected with it, that it is attracting considerable attention at Copenhagen. It produces a long-protracted illness, and terminates with a painful death; and means of cure have not yet been discovered. Von Siebold considers it as extremely probable that this disease, consisting in the development of a cystic entozoon, depends on the introduction of the ova of a *Tænia* into the body; and that this arises from the immense quantity of dogs kept in Iceland for the purpose of herding sheep and cattle. Should the further elucidation of this fact lead to the adoption of successful measures for the prevention of the disease, it will be a satisfactory instance of the assistance which may be furnished to rational pathology and the practice of medicine from physiological researches, which might at first sight have appeared to some to be very remote from such an application.

Before concluding, I would call the attention of medical practitioners, more directly than heretofore, to the investigation of the habits and circumstances of patients who may be under their care for various verminous affections. There is another department of the subject upon which I have been unable to touch, which is also greatly deserving of increased attention, I mean the collection of observations by those who may be favourably situated, as to the nature of the entozoa which affect different races and nations of mankind, together with the circumstances and modes of life, which may seem to have an influence in determining the nature of the entozoa in different countries. As a single example of what may be expected from well-conducted observations of this kind, I may here mention, that at Von Siebold's suggestion, Dr. Bilharz, being in charge of making dissections of the dead bodies in the hospital of Cairo, has already, within the short space of two years, discovered five entozoa with which the Egyptians and other native Africans are affected, and some of them very frequently and to a great extent, which are different from those which have long been known as the common entozoa of the European races.

VII. *Cases of Spontaneous Gangrene, with Remarks.* By William Weir, M.D., Physician to the Royal Infirmary, &c.

I PROPOSE to detail shortly the particulars of three cases of spontaneous gangrene, which occurred to me in the Infirmary about the same time, and to make a few remarks upon that affection. They are instances of what has generally been called spontaneous or idiopathic gangrene or mortification, but the affection has been denominated by Dupuytren *symptomatic* gangrene, in which the cause of the disease is supposed to be some general state of the whole system, and not merely an affection of a particular part.

Case I.—George Mc Gonagle, aged 17, admitted Dec. 23d.—Three weeks ago had slight febrile symptoms, and has still occasional chills and flushes of heat. Soon after was seized with cough and dyspnoea, and the legs began to swell from oedema. Four days ago first felt a sensation of cramp in right foot, which next day became of a blue colour, and acutely painful. In a short time the foot gradually assumed its present dark purple colour, became less painful, and somewhat devoid of sensation. On admission, the distal half of right foot is of a bluish purple colour, and over the remainder of the foot, and upwards to above the ankle joint, large patches of the same colour are situated. On these portions there are several large bullæ, filled with a clear reddish fluid. About six inches below the knee, the leg is colder than natural. This increases as the foot is approached; and from the ankle joint downwards it is perfectly cold. There is little or no sensation in the distal portion of the foot, and but very little below the ankle; but from that upwards to the knee there is great pain on pressure, and a reddish blush has spread over integuments. The anterior tibial artery cannot be felt pulsating in the affected leg, but it is quite perceptible in the other. Both legs are oedematous as far up as the knee. Has still considerable cough, without expectoration. Dry sibilant ronchi are heard in many parts of chest. Heart's sounds rather feeble, but quite distinct, and no intermission or irregularity can be detected; neither is there any distinct bruit perceptible. Pulse 112, of fair strength, and regular; countenance anxious, and general appearance denotes much suffering. *One grain opium morning and evening. Camphorated oil to limb.*

25th.—Leg and foot still very painful, but integuments scarcely so dark coloured. Pulse 120. Sleeps ill. *Omit the opium. Eight grains of Dover's powder thrice a-day.*

30th.—Vesications have appeared on dorsum of foot, various parts of which are of a bright red colour, cold, and deficient in sensibility. Leg still somewhat swollen, and painful on pressure; lower part of a dark colour, and sensation appears perfect. Foot and leg less cold than on admission. *Ten grains of Dover's*

powder with three of camphor, thrice a-day. Tincture of camphor to foot and leg. Blood-letting to six ounces.

Jan. 1st.—Nitrate of silver has been applied along the whole course of femoral artery in thigh, which has produced vesication. No change on leg. Blood drawn presents a thin coat of buff. Pulse 130, easily compressed. Much thirst.

2d.—Disease advancing. Foot and lower half of leg of a darker colour, and very cold. Sensation much less perfect than formerly. Countenance very anxious. Pulse 130, rather feeble. Pulsation of femoral artery at groin, in affected limb, very feeble. *Calomel and opium every third hour. Four ounces wine daily. Camphorated oil and hot flannels to limb. Omit Dover's powder.*

6th.—Mortification has been gradually spreading upwards, but to-day there is some appearance of a line of separation near the knee-joint. Had some diarrhoea last night, relieved by an opiate enema. *Omit calomel and opium. One grain of opium four times a-day. Increase the wine to twelve ounces.*

9th.—Right foot and lower part of leg are now quite gangrenous, with a very copious discharge, and line of separation from healthy parts distinct. Has had some pain in left foot, shooting up leg, which feels preternaturally cold. Pulse 136, very feeble. *Half an ounce of brandy with twenty drops sulphuric ether, every two hours.*

13th.—Mortified parts gradually separating. Still complains of pain in left leg, particularly at knee. Heat of this leg is now natural, but no pulsation can be discovered in any of the arteries of either inferior extremity. Pulse varies from 112 to 130; very weak, and easily compressed. Consultation decided that he was not in a fit state to bear amputation of the limb.

The mortified parts continued gradually to separate. He took his food pretty well, and was kept up by means of wine, brandy, and opium; so that he lingered, in a very weak and languid state, until the evening of the 22d January, one month after admission. Although the state of the heart's action is not mentioned in the daily reports, a distinct bruit was heard a considerable time before the fatal termination, and the pulsation of the heart was occasionally irregular.

For the following minute and accurate account of the morbid appearances, I am indebted to Dr. Alexander Barclay Sharp, who was at that time clinical clerk in the Infirmary:—

Inspection.—Lungs perfectly healthy. Both kidneys larger than natural, and in an advanced stage of granular degeneration. Upon the side of one of them, there is a large mass of a white, cheesy-looking matter, presenting externally a rough and discoloured surface, somewhat raised above the level of the gland. This mass, though of considerable extent, is superficial, penetrating but a few lines into the substance of the kidney. Several masses of the same description are observable on the spleen.

The heart is of natural size, but rather flaccid. Muscular substance pale, and, with the exception of a concretion to be presently noticed, perfectly empty. The area of the ventricles seems somewhat increased, at the expense of the parietes. The chordæ tendinæ and lamellæ of the valves are unusually thin, especially those of the right side. The posterior lamella of the mitral valve is loaded with warty vegetations, of a brownish-yellow colour and soft consistence. The width of the auriculo-ventricular opening seems natural. Just within this opening, and apparently slightly attached to its edges, is found a concretion, about the size of a small walnut, lying back in the cavity of the auricle. It also is of a yellowish-brown colour, and to all appearance identical with the vegetations on the valve beside it.

ARTERIES.—The aorta, down to the bifurcation, and all the large vessels, to a considerable distance from the heart, are apparently quite healthy.

Right Side.—In the humeral artery, about three inches above the bend of the arm, there is found a small red clot, or concretion. It lies loose in the vessel, at least it is very easily separated. The internal coat of the artery in contact with it is very red. It becomes gradually larger (the clot), and when about half an inch long, fills the calibre of the vessel, with which it here becomes amalgamated, for the artery beyond it is an imperforate cord. This soon becomes very small, and cannot be traced above a few inches. But both arteries at the wrist are found patent. In the external iliac artery, just at the groin, there is found a concretion, similar to the one in the superior extremity just described, except that the vessel is patent beyond it. The internal coat of the artery presents the same red appearance where in contact with this plug, which is certainly adherent to it, though easily separated. Included within the sheaths of the femoral vessels, about midway between the popliteal space and the groin, is a small lamella of bone. It is found adherent to the coats of the vein, but is in contact with both vessels, as it is firmly bound within the sheaths. From this the artery is traced easily enough to its division into anterior and posterior tibias. The latter vessel can be traced but a few inches further, when it becomes obliterated and lost. The anterior is traced through to the front of the interosseous ligament, but cannot be followed any further. The muscular substance in the neighbourhood of the mortified parts, and for four or five inches above it, is of a pale yellowish-white colour, and no trace even of the larger vessels can be found in it, though carefully sought for. The venous trunk of this extremity was traced as far as the artery, and is found to all appearance quite healthy, both internally and externally.

Left Side.—The vessels of the superior extremity of this side were not examined further than the axilla; so far they were quite healthy. In the external iliac covering, beginning about two and

and a half or three inches below the bifurcation, and occupying about four inches of the vessel's length, is found a plug, completely filling up the calibre of the artery. It is composed of a dark-brown substance, about the consistence of a pretty firm clot. It is adherent to the sides of the vessel, which also are stained brown; but for about half an inch above the plug, the inner coat of the vessel is of the same red colour as in the instances above described. The inferior half of this plug is patent, giving it the appearance of a false membrane, or rather of a small funnel being within the vessel, but the upper half is quite solid. From this part, down to the division of the artery into anterior and posterior tibiae, its channel is quite unobstructed, and appears natural, except that at intervals the internal coat presents bright red patches, on one of which there is found a few shreds of red matter. The whole of the anterior tibial artery, from its origin down to the ankles, is somewhat diminished in calibre. The internal coat is of a bright scarlet colour; and when cut open, the vessel does not lie flat, like the others, but curls up to its former shape. The bright redness of the internal coat gradually diminishes as the artery continues as the Dorsalis pedis, and at the great toe it assumes its natural colour. The veins of this limb, also, are to all appearance healthy.

Case II.—Ann Broadley, aged 31, admitted Jan. 4, 1847.—Was delivered of her fourth child about four months ago, and about the time of her confinement was much exposed to wet and cold, in consequence of which she was seized with cough, expectoration, and great debility. Soon after, inferior extremities began to swell. This was not attended with much pain, though the swelling extended up the thighs to the abdomen, as high nearly as the brim of the pelvis behind. At the same time there was a foetid sanguineous discharge from the vagina. After a few days the swelling began to subside, when the legs became cold and exquisitely painful. On admission, both legs, from the knee downwards, are perfectly cold. The right one, from the ankle to within a few inches of the knee, is of a bluish, purple colour; and there is a distinct though irregular line of demarcation just below the head of the tibia. From the knee upwards, the limb begins to regain its temperature, and attains its natural heat about the middle of the thigh. The femoral artery cannot be felt pulsating beyond this point, and even the pulse at the wrist is scarcely perceptible. The left leg is in the same condition, as to temperature and circulation, as the right; but it is of a mottled purple colour, instead of being universally blue, and there is no line of demarcation. Sensation in both limbs is very much impaired, especially in the right, from the situation of the line downwards. Both are extremely painful from hip to knee. So are also many parts of left limb below the knee. The parts of the right immediately above the boundary line are also very painful, and the whole of this limb is considerably swollen when compared with the left.

Complains still of some cough, with copious expectoration. The dry sounds of bronchitis are heard in both sides of chest anteriorly, and moist mucous crepitation is present at the base of the lungs posteriorly. A faint but very perceptible bruit accompanies the first sound of heart, which is heard best at apex. Pulse 140, scarcely perceptible. Tongue white. Bowels slow. *Anodyne pill at bedtime. Castor oil in the morning.*

5th.—Pulsation of heart, in cardiac region, rather more distinct and stronger than on admission. Legs continue very cold, and nearly devoid of sensation. Lividity spreading upwards. Pulse 120, easily compressed. *Calomel and opium every fourth hour. Twelve ounces of wine daily.*

9th.—No improvement. Left limb much swollen, and right very painful as far up as mid-thigh. Lividity of both extending. Pulse 124, very feeble. Bowels loose. Mouth slightly sore. *Omit calomel and opium. Three grains camphor and one of opium, four times a day. Continue wine, with the addition of four ounces brandy.*

11th.—Feels more comfortable, but disease is evidently progressing. Redness of right leg has extended to within an inch of patella. A large blue spot has also appeared on outside of left leg, and the toes have become slightly discoloured, but sensation is still present. Takes some food. *Continue medicines.*

13th.—Vesications are appearing in many parts of left leg. There is a bluish spot above right knee, and much pain and swelling in ham, extending up thigh. No pulsation can be felt in any of the vessels of this limb. Pulse at wrist 120, of better strength. Bowels rather loose. *Chalk mixture.*

16th.—Surface of both legs is now vesicated, and nearly of a black colour, but disease is not otherwise extending. Action of heart very strong in cardiac region, but pulse at wrist feeble and easily compressed. Diarrhoea continues. Takes some food. *Chalk mixture, with catechu. Small blister to region of heart.*

18th.—Both legs of a very dark colour, and vesicated throughout. Redness and œdema extending above both knees. Pulse 130, very feeble. Bowels still loose.

This woman now expressed great anxiety to leave the hospital and return home. She was accordingly dismissed by desire on the 19th, the opportunity being thus lost of ascertaining, by *post mortem* examination, the state of the heart and of the arteries of the limb. I understood she died a few days after leaving the Infirmary.

Remarks.—These two cases are instances of spontaneous gangrene, arising in both without any evident cause, at least without any immediate cause. They have many things in common. No doubt the boy appears to have had a febrile attack at the commencement, followed by some anasarca, and the woman had a short time before been delivered of a child; and the state of par-

turition is often followed by swelling of the inferior extremities, arising from affections of the blood-vessels or lymphatics of the limb. Inflammation of the arteries is now found to occur occasionally in puerperal cases, and in such to be the sole pathological change discovered after death, to account for the violent symptoms and the fatal termination. There is, therefore, in her more of cause for the gangrene than in the boy. He was not exposed to the vicissitudes of the weather, to the want of nourishing food, or to any other cause likely to predispose to such an affection. Up to the commencement of his illness he was at work, gaining twelve shillings a week, and only himself to support. These cases, therefore, cannot be considered as examples of mortification arising from real debility, where the strength is greatly reduced by want and fatigue; nor yet were they produced by the great violence of acute disease, as after an attack of typhus fever; nor from chronic disease, accompanied by much pain, extensive suppuration, and such like. None of these causes appear to be applicable to either of the cases.

The most frequent kind of spontaneous gangrene that is met with, is that long ago described by Pott, which attacks the toes and feet of old people, and has been called dry gangrene and *gangrena senilis*, in which the parts are dry, shrivelled up, and quite destitute of fluid, in contradistinction to the humid gangrene, in which the cellular substance usually contains a quantity of serum or pus. But spontaneous mortification or gangrene is not confined to old people, as the term *gangrena senilis* would imply; for probably the most severe cases, and the most destructive effects of the disease, will be found in the young. The two cases I have detailed were both young subjects; and although they are certainly not examples of the dry gangrene of Pott, the disease having proceeded very differently from the affection described by that author, yet they are proper instances of spontaneous or idiopathic gangrene, originating from some internal, and not from any external cause.

But the subject of spontaneous gangrene, in so far as the causes of it are concerned, is still involved in considerable obscurity. Cases, I have said, have occurred, and many are on record, with all the symptoms of *gangrena senilis*, in persons of all ages. Even in very young children the disease has been observed. The term, therefore, *senilis* is objectionable. Spontaneous gangrene is much better. Tiedemann has recorded twenty-five cases of senile gangrene affecting persons of all ages: some in children, some in adults, and some in advanced life.* In early life, the cause of the disease is probably not the same as in advanced age, although ossific deposits in the arteries, generally supposed to be confined to old persons, and to produce obstructions, followed by gangrene, may occasionally take place even in the young.

* *Lancet* for 1853, vol. i., p. 316.

Many authors now consider mortification of this kind as always depending on disease of the heart or of the arteries leading to the parts affected, and sometimes of both. Accordingly, some of my colleagues, who saw these cases, and were consulted regarding their treatment, considered them examples of arteritis, meaning by that term, inflammation of the lining membrane of the arteries of the part, and probably, also, of the lining membrane of the heart. Upon that supposition the boy was bled, put upon calomel and opium, and had the nitrate of silver rubbed over the course of the femoral artery. The appearances found on inspection, and many of the symptoms during life, would justify this opinion, in so far as the arteries were concerned. There were no marks of recent acute inflammation of the pleura, the lungs, or the heart, unless the warty growths or vegetations found adhering to the mitral valve, and the concretion in the auricle, may be considered the products of inflammation. The pathological changes incident to inflammation were observed, however, in several of the arteries. In the right humeral, there was a concretion lying loose in the vessel about three inches above the elbow joint, and the artery down to its division was imperforate; both external iliacs were plugged, and their coats thickened, although on the right side there was no obliteration until near the mortified parts. The anterior tibial artery was of a very red colour, and its coats thickened; there was no disease of the veins. These, and the other particulars already given in the detail of the case, will probably be considered sufficient to justify the opinion, that arteritis existed in the boy, and was the cause of the mortification of the extremities.*

I believe arteritis to be a very rare affection, although some high authorities have attributed almost all the morbid appear-

* It was only some time after reading this paper to the Glasgow Medico-Chirurgical Society, that I had an opportunity of seeing Mr. F. Le Gros Clark's translation of Dupuytren's "*Lesions of the Vascular System*," published by the Sydenham Society. From the section "*On symptomatic gangrene consequent on arteritis*," I shall make a few extracts, as applicable to the remarks in the text.

"The varieties of gangrene to which the epithets spontaneous, senile, dry, &c., have been severally assigned, have hitherto been studied almost exclusively with reference to their external characters. Moreover, practitioners have kept in view the necessity of arresting the gangrene by topical applications, and procuring the separation of the affected parts, without directing the attention to other and more general measures. Struck with the obscurity which involved this disease, I endeavoured to throw some light upon it by the aid of pathological anatomy, and was soon convinced that, although the cause had been overlooked, it nevertheless existed, and was often to be discovered in inflammation of the principal arteries of the parts affected, which presented a reddened appearance, with the blood coagulated in them and blocking their canals, so as completely to arrest the flow of blood through them. The coagulation may arise in different ways: either by the contact of the blood with the inflamed membrane, or by mixing with coagulable lymph, or by ulceration of the artery. Examination after death has proved the existence of all these conditions."—*Dupuytren on Lesions of the Vascular System*, p. 16. Sydenham edition. 1854.

ances and changes in the lining membrane of the heart and blood-vessels to inflammation. Ætheromatous and calcareous depositions, so frequently found in the arteries, thickening of their coats, and other morbid changes, may no doubt be in general the effect of long-continued chronic inflammation. But true acute arteritis is an affection not often met with. The lining membrane of the heart and of the arteries is often found of a deep-red colour after death; but this does not always arise from inflammation, and certainly cannot be easily ascertainable during life by any constant regular series of symptoms. It has been found in those who have died of very different diseases, as after typhus fever, phthisis, cachectic subjects affected with scurvy, &c., and is supposed by some to take place only during the agony of death, in cases where there has been a manifest alteration of the blood and a somewhat advanced decomposition of the body. In order to connect this more or less redness of colour after death with acute inflammation during life, there must be some alteration of the structure, as swelling, and thickening, or softening of the lining membrane, with preternatural vascularity and effusion of lymph. When these morbid changes are found, along with those discovered in the arteries, in the case of the boy, we are warranted in concluding that the state of acute inflammation has been present.*

Acute arteritis is difficult of diagnosis. Indeed, I am not aware that it presents any symptoms during life peculiar to itself to distinguish it from other diseases. It is rarely known to exist independent of inflammation of some of the principal viscera, as the lungs, the pleura, pericardium, &c. The cases on record are not numerous; but the result has usually been gangrene of one or

* "In investigating the cases of individuals who are subjects of symptomatic gangrene, it will be almost always found that they have been addicted to spirit-drinking or gross feeding, or that they have been affected with some chronic disease of the heart, of the aortic valves, and of the great vessels, all of which are causes that operate most frequently in provoking irritation and inflammation of the arterial system. In most cases, the gangrene is preceded by pains, sometimes of a very acute character, by fever, and other symptoms which announce the presence of inflammation; and pathological anatomy, as I have already observed, always demonstrates, in such a case, the existence of inflammation in the arterial coats. Such morbid actions may doubtless occur in arteries already diseased, indurated, or ossified, as we observe frequently in old people; but they are also met with in young subjects, in whom no trace of such morbid changes exists.

"Direct experiment on living animals proves, that inflammation of an artery which is excited by irritation, and which is followed by coagulation of the blood and the exudation of plastic lymph which glues it to the arterial walls, produces similar effects, determining artificially the same form of symptomatic gangrene as may, under other circumstances, occur spontaneously. M. Cruveilhier has indeed established the fact, that the injection of irritating substances into the arteries of an animal occasions inflammation of the internal coat of these vessels, and consequent mortification of the parts to which they are distributed."—*Dupuytren on Lesions of the Vascular System*, p. 17.

both extremities, with or without disease of the heart. The inflammation is not confined to the arteries connected with the mortified parts, but is frequently found in the aorta, in which there have been discovered, after death, fibrinous effusion and coagulable lymph. When the disease evidently has its origin in the arteries of a limb, as in consequence of a lacerated wound or other injury, it may, and often does, spread to the large vessels and even to the heart itself, giving rise to the most formidable symptoms, and speedily terminating in death. We are told that strong pulsation of the heart and of the affected arteries are present in acute arteritis; but, no doubt, when the disease gives rise to the thickening of the coats and the effusion of lymph, the smaller vessels becoming obliterated and the larger obstructed, then the pulse will become weak, frequent, and irregular, and gangrene of the extremities is apt to supervene.

A very interesting case of this affection occurred in St. Bartholomew's Hospital, and is detailed at great length in the *Lancet* for 1854. As presenting some points in common with these two cases, I shall give a short abstract of it here. The patient was a woman, aged 17, who appears to have suffered from low fever about six weeks before admission into the hospital. She had sunk very much, and was not expected to recover; but she ultimately rallied, under the influence of stimulants in large doses. Shortly after convalescence she was seized with numbness of the right leg, and neither the anterior nor the posterior tibial arteries could be felt pulsating. Three days afterwards the toes became of a dusky tinge, which rapidly spread over the foot and some inches up the leg, and was attended with very severe pain. The heart sounds were loud and clear, although the action of the organ was excited and feeble. In a few days large blisters appeared on the outside of the leg, the pulse rose to 150, and the femoral artery could with difficulty be felt pulsating. By the eighth day a line of separation was beginning to be formed, and after this the disease did not spread. By the sixteenth day the foot was quite black, "the muscles of the leg were exposed, and divided by the line of separation down to the bone." Nevertheless, all the surgeons, to the amount of half a dozen, who frequently examined the patient, agreed to leave the case to nature. One reason for this decision was, that a hard cord felt in the groin was thought by one of the surgeons to be the artery, by another a vein, and by a third, an enlarged gland. On the twentieth day, nature having done her part in separating the soft parts of the limb, at very serious risk to the patient, the tibia and fibula were sawn through, and the leg removed. The gangrene, however, soon after seized the stump, and again this young woman was in great danger. But notwithstanding this, and several sloughing bed sores, which reduced her to a state of great debility, she recovered, and was discharged in perfect health, "just fourteen

months after her original admission." "The cause of the gangrene of the limb in this case," the narrator says, "looks very much like arteritis after typhus, or complete loss of nervous power in the foot and ankle, as a sequel of the fever, and not from ossified arteries, or from a defect in the central organ of circulation."*

The following is an example of spontaneous gangrene of the inferior extremities, arising evidently from long-continued disease of the heart, with a more recent affection of the arteries of the limbs.

Case III.—Elizabeth Thomson, aged 28, admitted February 29, 1852.—Has been troubled with palpitation and irregular action of the heart for twelve years. Seven weeks ago, after exposure to damp and cold, was seized with acute pain in the cardiac region, and the palpitation became greatly aggravated. A short time afterwards was attacked by rheumatic pains in the legs, and also the joints of the lower extremities. To the whole of the surface of the right leg she applied tar, which was soon followed by inflammation and ulceration of the skin from below the knee down over the dorsum of the foot. This state of the limb continues, and she still complains of rheumatic pains in both feet. At present there is much uneasiness in the region of the heart, with great precordial anxiety. Occasionally acute pain takes place, which, however, seldom continues more than ten minutes at a time, and is sometimes accompanied with nausea and vomiting. The heart is perceived beating violently over a much larger space than natural, and the cardiac dulness is also extended. There is some turgidity, but no pulsation, in the left jugular vein. Auscultation discovers both sounds of the heart distinctly, attended by a continuous low bruit. There is much irregularity in its action. Tongue white; bowels costive. *Castor oil and afterwards calomel and opium; eight leeches to the precordia; four ounces wine.*

March 2d.—There is much coldness and superficial sloughing of right leg. Left leg below knee has also become cold, and both are very deficient in sensation. Has had some sleep. *Carbonate of ammonia, five grains in solution thrice a day; one grain opium every night.*

3d.—Pain in region of heart and dyspnoea greatly relieved since admission. Pulse still very irregular. No pulsation can be detected in arteries of right leg. In left leg, pulsation very faint. Bowels open. Takes some food.

5th.—Debility has much increased. Gangrene in right foot spreading, and left foot very livid, with no pulsation in any of the arteries. Countenance very anxious. Pulse at wrist feeble, and very irregular. Is evidently sinking. *Omit calomel and opium, also carbonate of ammonia. Six ounces wine. One grain of opium thrice a day. Died next day.*

* *Lancet*, vol. i. for 1854, p. 247, where several similar cases are detailed.

Inspection twenty-four hours after Death.—The chest alone was opened. Lungs apparently healthy. One ounce of fluid in pericardium. Muscular substance of heart pale and flabby, except at left ventricle, which was somewhat hypertrophied. The semilunar valves of the aorta were found fixed together by a rim of osseous matter, by which their action must have been greatly impeded; and just at the origin of the aorta, there was a firm, hardened excrescence, embedded in the muscular substance. At the edge of the mitral valves, also, a large bony excrescence was present, from which a cartilaginous ring passed, and surrounded the whole auriculo-ventricular orifice, by which the opening of the valve was greatly narrowed. On the right side the valves were healthy. A portion of the right femoral artery, extending from Poupart's ligament to the edge of the triceps muscle, was examined. A clot was found plugging up the artery, from its exit under Poupart's ligament to where it gives off the profunda. The calibre of the vessel was much contracted, in consequence of considerable thickening of its coats, but it still remained pervious. Permission to inspect the other parts of the body was not allowed.

Remarks.—In this case, the morbid alterations discovered in the heart were quite sufficient to give rise to great obstruction to the free circulation of the blood, and, taken along with the diseased state of the femoral artery, must be considered a sufficient cause for the mortification of the limbs. This woman was admitted at first into the surgical wards, but there was at that time so little appearance of disease of the leg, that she was sent to the medical wards, to be treated for the affection of the heart, under which she was said to have laboured a long time. From the history it would appear, that the more acute affection of the heart, which proved fatal, was of about seven weeks' duration only, and the disease in the lower extremities showed itself two weeks subsequent to the former. I learnt from herself that she was exposed to the exciting causes of gangrene, for some time before the disease appeared. She was nursing an infant a few months old, and had not the means of procuring sufficient nourishment. She was in consequence weak and enfeebled, and in a state of general *malaise*, at the time she entered the hospital, besides having been affected with chronic disease of the heart of long standing. There does not appear to have been any febrile excitement at the commencement, and there was certainly no symptom of acute inflammation of the arteries generally. There was no violent pulsation of any of the vessels, but rather the contrary. The disease in the right femoral artery must be looked upon as of a chronic character, and the very great disease in the valves of the left side of the heart must be considered as the chief cause of the mortification of the extremities. This species of gangrene probably arises more frequently from disease of the lining membrane of the heart, than from any similar affection of the blood-vessels, the pathological

changes generally found in the latter, being considered by most authors as the effect of the state of the limb, or, at least, as taking place subsequent to the appearance of the gangrene.

In looking over some authors on this disease, and perusing many isolated cases in the journals, I find the opinion very general, that in this kind of gangrene amputation is not advisable, at least until nature has done her share of the work, and separated the dead from the living parts so completely, that the surgeon has only to divide the bone with the saw or the cutting pliers. In a case where the whole foot was black and mortified, related in the Royal Medical and Chirurgical Society, in March, 1853, amputation high up in the thigh was performed, and the patient did well. The femoral artery was found ossified to two-thirds of its circumference. In the discussion which followed the reading of this paper, this practice was spoken of as a new practice, and one by no means to be followed generally, but only in a few exceptional cases attended with peculiar circumstances. The usual practice seems to be to allow the toes, or even the whole foot, to drop off, or at least not to remove them until the soft parts have all separated perfectly down to the bone. In cases of traumatic gangrene and mortification under other circumstances, surgeons do not hesitate to remove the limb whenever a line of separation has distinctly taken place, and sometimes even while the gangrene is still spreading. Spontaneous gangrene, arising, as is supposed, from some internal general cause, is perhaps best left to nature; or if, in some cases, it is thought advisable to remove the limb, amputation should be performed as high up as possible.

Dupuytren says on this subject:—"A very interesting question here presents itself: If the gangrene continue to extend, is it not sound practice to amputate all the affected or menaced parts in order to preserve the rest? This operation has been performed by a well-informed surgeon frequently, and with success, during extension of the gangrene; why not follow his example? This is the answer to the question:—Where the gangrene is consequent on some cause acting from without, both cause and effect may at once be removed; but in cases like the above, where gangrene is but a symptom, it is clear that amputation can have no direct influence in arresting the disease. In short, it may be laid down as a rule, that amputation ought to be deferred until the line of demarcation is defined, and the exciting cause of the disease has been subdued. There are, however, exceptions to this rule, as proved by a case under my care, in which gangrene attacked both feet, and destroyed the patient. This man had had his left great toe amputated two years before for a similar affection, and had recovered. When his body was examined, very many of the arteries were found ossified, even including the cardiac branches. The principal arteries of the lower extremity were obliterated, and the vena cava itself presented some patches of ossification."

I take leave to make a few more extracts from this paper of M. Dupuytren. He says—

“The indications of symptomatic gangrene are very remarkable. In fact, from the first it is entirely a local disease, and very puzzling to those unacquainted with its true pathology. All the important organs perform their functions healthily; and it is only as the disease advances, and doubtless, in a measure, as absorption takes place, that the constitution seriously sympathises, and death ensues. Gangrene is ushered in by a feeling of numbness and discomfort, attended by a sensation of coldness and pallor of the part, which are very remarkable. It is not, as one might suppose, a corpse-like coldness, such as would result from the affected part being reduced to the temperature of the surrounding air; but the loss of heat exceeds this, and the thermometer marks a lower degree of temperature than that which is imparted even by flowing water.”—“With the loss of heat, there is also loss of sensibility; but pain, and that of the most acute and agonizing character, accompanied by distressing itching, often attends this complaint.”—“But the most interesting symptoms to watch, are those which take place in the artery. The pulse is imperceptible to the finger, or even entirely ceases. In the course of the artery is felt a hard, round cord; and an accurate estimate may be made of the extent and progress of the disease by the limit of pulsation, and natural feel of the artery.”

“The treatment has varied according to the supposed origin of the disease. Pott, who made some valuable observations on senile gangrene, first employed bark and opium. But finding the former of these mischievous, he limited himself to the use of the latter, and with considerable success. Yet, even in the hands of this able surgeon, many fatal cases occurred, and a more available method of treatment was still a desideratum. I have myself given every form of stimulant, but only with the effect of feeding the disease, when it had its origin in arteritis or ossification.”

Among several cases detailed in Dupuytren's paper, in which blood-letting and the antiphlogistic treatment were successful in relieving or curing the gangrene, I quote the following:—“A woman, aged sixty and odd years, came to the Hôtel-Dieu, to be treated for senile gangrene, affecting the toes of the left foot. She had suffered excruciating pain for some months prior to the appearance of dry gangrene, and the neighbouring parts of the foot were swollen and livid, and the odour emitted was very offensive. For many months I had recourse to the usual forms of treatment, including bark and opium, administered internally and applied locally; but still the disease extended, involving soft and hard parts alike in its destruction. A careful examination proved the non-existence of any important organic lesion. Vexed and disappointed, I determined on trying a different plan of treatment; and in this I was guided by the pulse, which was full and hard,

and the florid face. I bled her. The pain was mitigated, sleep returned, and the progress of the gangrene was suspended. In short, the patient had not felt so well since the commencement of her attack. At the expiration of a fortnight, the symptoms returned, and she was bled again, with similar benefit as on the former occasion. This treatment was adopted at each recurrence of the symptoms; the mortified parts separated, and the stump healed. Ultimately the patient left the hospital quite well. Since the occurrence of the above case, many patients affected with senile gangrene have been treated by blood-letting, and always with similar success. But is this treatment applicable to all forms of the disease? I think that it may be advantageously adopted whenever the disease is accompanied by acute pain and much swelling, the pulse hard and full, and the face flushed."

M. Dupuytren's paper concludes with these remarks in regard to the treatment of this affection:—"In all the cases of symptomatic gangrene which have come under my care, I have employed repeated bleeding, and have thus succeeded in curing, or at least relieving, two-thirds or three-fourths of the patients."*

VIII. *Report of Medical Cases treated in the Glasgow Royal Infirmary, from 1st November, 1854, to 1st May, 1855.* By Joseph Bell, M.D., one of the Physicians to the Infirmary.

NEARLY twenty years ago, one of the ablest and most accomplished of our hospital surgeons, the present Professor of Medicine in the University, Dr. John Macfarlane, in an admirable report on surgical cases,† stated "that periodical reports of medical and surgical practice of our public hospitals, if drawn up with accuracy and fidelity, so as to show the various diseases admitted, with the different plans of treatment and their results, whether these may be fortunate or the reverse, cannot fail to become useful to the profession and beneficial to the community. It was with these objects in view that I was induced, in May, 1834, when one of the Directors of the Glasgow Royal Infirmary, to move for the appointment of a committee to consider the propriety of publishing, at the expense of the Institution, an annual volume of reports, to include the practice of all the attending physicians and surgeons, believing that such a publication would tend to the improvement of medical science and practice, and probably stimulate the medical officers of other hospitals to promulgate, in a similar manner, the important facts they might from time to time accumulate."

It is to be regretted that this admirable plan has never been adopted. Though it is not my intention to agitate the subject,

* Dupuytren on Symptomatic Gangrene, p. 25, &c.

† Edin. Med. and Surgical Journal, Jan. 1837, p. 1.

yet it will afford me much pleasure if these remarks should lead to its reconsideration by the Directors. Dr. Macfarlane being one of their number, his able advocacy might tend to insure success.*

In the meantime, I would observe that, in addition to the great advantage which he points out, there is another of very considerable importance. The majority of the large number of students who attend the Infirmary, receive within its wards their first practical acquaintance with disease and its treatment. The clinical experience thus gained, forms the basis of their future practice. Unfortunately, the greater number of the cases, as well as the result of the treatment, must soon become forgotten by the medical novitiate, at least as regards details, the very points of greatest value to him, until he acquires further experience. Hence what he sees in the Infirmary is comparatively of very transitory benefit. But if such reports as those to which Dr. Macfarlane has alluded were published, they would obviate the drawback, and become most valuable books of reference to the students, many years after they had entered on their practical career. In my humble opinion, such periodical reports would be, in this respect, of the greatest benefit, not only to the profession, but also to the community.

In the following pages I shall endeavour to bring under the notice of the readers of this Journal, a summary of the cases which have been admitted into the wards under my care, from 1st November last till 1st May, with the treatment and its results; adding such comments as I may deem likely to prove either useful or interesting.

I.—DISEASES OF THE BRAIN AND NERVOUS SYSTEM.

Of this class of diseases, there were admitted five cases of hemiplegia, four of paraplegia, seven of hysteria, four of epilepsy, one of delirium tremens. No deaths.

The cases of hemiplegia presented no points of unusual interest; they were all the results of apoplectic seizures; hypertrophy of the heart existed in three of the cases. The treatment consisted in counter-irritation to nape of neck, cupping, and alteratives. In the more recent cases, mercury was exhibited till the gums became tender. The effect appeared beneficial. The preparation used was either the bichloride or protiodide.

The following case of paraplegia exhibited several peculiar and interesting phenomena:—

Case I.—J. M. C., aged 50, labourer, admitted November 11th,

* This plan had been previously adopted by the medical officers themselves, without the co-operation of the Directors, and quarterly surgical reports were published, for several years, in the former series of this Journal. It was expected that the same would have been continued in the present series; but, with one or two exceptions, the acting physicians and surgeons have not carried this out. This is to be regretted.—ED. G. M. J.

1855.—About three months ago, he first experienced a want of power of lower extremities; this gradually increased, and now they are entirely paralysed. Sensation is also greatly impaired. He has likewise lost his vision, and he can move the eyeballs only outwards. The upper eyelids droop; he is able to elevate them only to a partial extent. The pupils are contracted. He has also great difficulty in voiding urine. On examining chest, heart is found much enlarged; impetus strong; apex low down, and much to the left of its usual situation. About centre of sternum, and up along its right margin, a diastolic bellows murmur is audible; it is also heard at top of sternum, and very slightly to the left, but it is not audible at nipple, or over apex of heart. Never had either rheumatism or apoplexy. He states that his habits have been always regular.

A seton was inserted at nape of neck; he was ordered to have a teaspoonful of syrup of iodide of iron three times a day; his bladder to be emptied by catheter, and the bowels kept regular by compound colocynth pills. He left the Infirmary on the 26th, improved in no respect, except great relief from the introduction of the catheter.

Commentary.—The points worthy of notice in this interesting case are—1st, The lesion of the nervous structure, on which this paralysis depended. 2d, The relation of the condition of the heart to these lesions.

1st. Paraplegia generally, if not always, results from disease of the spinal cord; but as there was, in this case, the paralysis of parts supplied with cerebral nerves, we must admit a more general affection of the nervous system. The loss of vision, the palsy of all the muscles of the eye, except the external rectus, indicated serious structural changes, either at the origin or inter-cranial course of the second, third, and fourth nerves, whilst the sixth and fifth nerves seemed to have escaped.

2d. *The Condition of the Heart.*—There was extensive hypertrophy of left ventricle, with a regurgitation through semilunar valves of aorta. The relation between hypertrophy of left ventricle and cerebral disease is too well known to require remark. In this case there was no evidence of the usual morbid result in the brain; namely, hæmorrhage. I think, however, the symptoms may be satisfactorily explained without this effusion being present. If we bear in mind the effect of the increased impulse of the blood sent by the heart to the large arteries of the base of the brain and of the circle of Willis, and the close relation which these arteries hold to the origin of the optic nerves—the course of the third and fourth—the former running between the posterior cerebral and superior cerebellar arteries—we can easily conceive how these nervous structures must become injured by distension of the arteries. I deem it, therefore, highly probable, that by the increased arterial impulse and pressure, the nutrition of the nervous

matter was seriously interrupted, and that consequent softening and wasting had taken place. Very probably a portion of the spinal cord had undergone the same diseased action, in consequence of congestion, induced by the disease of heart.

In the *Edinburgh Monthly Journal of Medical Science* for July, 1853, Mr. John Struthers details a case of paralysis of the common motor nerves of the eye. This case is calculated to throw light on the one which I have related. The patient, some time after an attack of apoplexy, lost the power of the parts supplied by the third nerve of left side. He had a second attack, which ended in death. At the *post-mortem* examination, the parietes of the internal carotid arteries were found slightly atheromatous:—"The third nerve on the right side seemed so closely embraced by these two arteries, that had this been the paralysed side, it might have been supposed to have been the cause of the paralysis; but in the paralysed side, the arteries lay at some distance from the nerves. . . . On the left side, it" (the common motor nerve) "was fully one-third smaller than on the right, and was of a brownish-yellow colour, all the others being of a pure white. . . . Under the microscope, the nerve tubes, from the left third nerve, were about half the size of those from the right, and proportionally more mixed up from filamentous tissue."

The case, I think, tends very much to confirm the views which I entertain, as to the cause of the paralysis in the case which I have quoted. From the absence of rheumatism, it appears to me that the case originated as simple hypertrophy of the left ventricle, a disease of frequent occurrence among our labouring population. Dilatation of ventricle next supervened, and this led to incompetency, as it generally does, of the semilunar valves, and consequent regurgitation. The cerebral and spinal lesions originating from those of heart.

Treatment.—The indications of treatment in this case were, to relieve cerebral and spinal congestion, to maintain a healthy condition of the general system, and avoid all excitement. I therefore ordered a seton in nape of neck, a means of counter-irritation I have found very serviceable in this class of cases. With the view of keeping up the vigour of his system, I ordered the *iodide of iron*, and recommended him to reside in the country. The excitement and confinement, to which he would be submitted in the wards, were not likely to prove beneficial. Indeed, no line of treatment can be expected to prove of much use in such cases.

In the other instances which were admitted, the same plan was followed, without any apparent advantage, except in one case, of partial loss of power in the arm of a female patient. Very probably this one was of an hysterical character. There was a very well-marked case of this species of paralysis, and it affords a good example of one of the forms under which this protean malady exhibits itself.

Case III.—Hysterical Paralysis of lower Extremities, increased sensibility of the whole Cutaneous Surface, simulating Myelitis.—Mrs. G., aged 40, admitted Nov. 22.—She stated that, after exposure to great fatigue about five weeks previously, she lost her strength. This was followed by severe pains over all her body, so severe in lower extremities as to deprive her of ability to move them to the slightest extent. On admission, her arms were in a similar condition. She had also acute pain over hypogastrium, *and great difficulty in voiding urine.* She lay on her back, unable to move her limbs, the slightest motion causing her to scream. She constantly moaned from spasms of legs, and the slightest pressure over almost any part of her body elicited the same cry of suffering. But when her attention was directed from the part, she did not seem to suffer from any amount of pressure. Pulse 80. Bowels confined. Catamenia absent since commencement of illness. *Twelve grains of Dover's powder.* Next day *two assafoetida pills, night and morning, and an assafoetida injection at bed-time each night.*

After the first injection she was greatly better. On the 9th of December she was dismissed cured.

Commentary.—In cases such as this, hysterical symptoms are seldom fully developed. We have no globus—no convulsions. Indeed, in all its simulated forms, the disease exhibits few of the nosological symptoms. A somewhat facetious writer on female complaints, divides hysteria into the genuine and the spurious. The former occurs among robust country girls, and is generally the result of mental conditions. The fit perfectly agrees with the description of nosologists. In the spurious we have few, if any, such symptoms, and it is met with chiefly among the inhabitants of cities—females whose systems are debilitated, on the one hand, by vicious habits, confined air, insufficient nourishment, and that harassing anxiety of mind, which is experienced by those who have to struggle to obtain a scanty supply of the necessaries of life; and, on the other hand, by indolent and luxurious modes of living. In both classes, the sensibility of the nervous system is increased to a morbid degree. Uterine disturbance takes place, and forms the most frequent, if not the invariable, attendant of the disease.

In the case which I have quoted, the patient had undergone severe exertion, under depressing circumstances. Suppression of the menstrual flux was soon succeeded by excited sensorial feelings in the lower extremities, gradually extending to the rest of the body, so as to imitate most closely an attack of myelitis, accompanied with paralysis. The absence of all the symptoms deemed characteristic of structural disease, either of the spinal marrow or its envelopes, led me to pronounce the case to be hysterical. It is to be observed, that in instances of this kind the loss of motive power is more attributable to the spasmodic pain which originates from the motion than to real paralysis. No doubt often, in genuine

paralysis, motion of the part causes pain, but *pressure* made over the paralysed muscles rarely does so. Again, the remarkable effect, which the fixing of her attention had on the phenomena, was quite conclusive as to the real character of her illness. Such a case always proves puzzling to the young practitioner. A little experience soon enables him to perceive that the *sufferings are more severe* than in the genuine disease. In all the simulations of hysteria, the symptoms, by their very *acuteness*, proclaim their origin, the hysterical being always an exaggeration of the *real*. The condition of the pulse was also of some aid in assisting the diagnosis. Under the treatment adopted she got rapidly well. Her catamenia appeared before she left the house.

I have met with cases in which the disease most closely resembled genuine paraplegia, the sensorial power remaining normal. Similar cases have been recorded by Sir B. Brodie, Dr. Copeland, and others. I have generally succeeded by large doses of assafoetida, given as in the case now quoted.

None of the other cases of hysteria presented any peculiarity. There was one instance of the true convulsive form. The patient was under treatment for lupus. She witnessed an attack of epilepsy in another patient, and was seized with a genuine hysterical fit. This frequently recurred, often several times daily, in spite of all the ordinary treatment. As such cases seldom recover when the patient has too many sympathising faces around her, I had her removed to a side ward. The effect of this was immediate. The paroxysms nearly disappeared. She was sent home, and she had only one fit after dismissal, thus illustrating the beneficial effect of change of scene and associations in hysteria.

I.—EPILEPSY.

Case IV.—Epilepsy of one year's duration, connected with Disease of Cranial Bones—Cure.—A. M'—, aged 32, admitted January 18, 1855.—About a year ago, when at sea, he was first seized with a fit of an epileptic character. Since then he has had one attack, at least, every three weeks, but without regularity in the periods. He stated that the first attack was the most severe that he has had, and that the subsequent fits have been preceded by a sensation of numbness in left arm, commencing in the fingers, and extending upwards to the shoulder, and then down the leg of same side. He then becomes giddy, and the fit succeeds. He states also, that during five years previous to the first attack he led a very dissipated life. The first attack came on after a course of mercury, which he took for the cure of a node situated over left parietal bone. He also stated that some small pieces of bone came away from this part, a statement which is confirmed by a distinct round depression, evidently extending down to the inner table of bone. He was ordered to be cupped once weekly at the nape of the neck, to the extent of ten

ounces; to take five grains of the iodide of potassium three times a day; to keep his bowels regular with the aloetic pill. On the 25th he felt some of the premonitory symptoms, but no fit supervened. From this till the 15th February he remained in perfect health, and was dismissed. Though I have said cured, yet this is very doubtful. Epilepsy is so irregular in the occurrence of its attacks, oftentimes the interval being much protracted, that we must always have great hesitation in pronouncing any case cured.

The history of this case, combined with the depression in the parietal bone, led me to infer that very probably some disease of the inner table existed, which, from pressure on the membranes of the brain, gave rise to the paroxysms. On this view, I adopted the treatment to which he was subjected, the result being, if not a cure, at least a mitigation of the disease.

Dr. Graves, in his Clinical Lectures, narrates a case, in which the fits originated from an injury to the external table of the cranium. Whilst in good health, the patient was seized with an epileptic fit. This was succeeded by others at various intervals. He came to Dublin for medical advice, and consulted the most eminent physicians of the day with little advantage. "When on one day going to meet them, he observed that a swelling and tenderness had appeared on the top of head. He then recollected that four years previously, when riding rapidly, his horse had fallen, and that his hat was cut and dinged; and on rising to his feet, he felt dizzy and confused, from which he soon recovered. The swelling was opened, and after some time portions of diseased bone came away. After this very considerable mitigation of the disease took place." *

I may mention, that very recently I was called to see a gentleman who had been seized on his way through this city to England. When I saw him the fit was over, but, from what I learned, there could be no doubt of its epileptic character. He informed me that he had not had any fit for some years, but that, after an injury of the head, a piece of the parietal bone came away, leaving a depression. The fits commenced shortly after accident, but since the extraction of the bone he had only one attack.

These two instances seem to confirm the opinion which I formed regarding the cause of the disease, in the case of the Infirmary patient.

The only point of interest in the other cases was, that one owed its origin to the disgusting practice of onanism, by no means an unusual cause of the disease. He stated that the fits commenced four years before admission, and that he had, during many years, been guilty of the practice of self-abuse, and still continued it, but to a much less extent. Lately, he has been constantly giddy, and when walking staggers along in a most unsteady manner. His

* Clin. Med., vol. i., p. 541.

pupils were much dilated and prominent, and conjunctiva of unusual clearness; constant palpitations of the heart, symptoms very characteristic of the practice.

Treatment.—He was put under iron as a tonic, and the cold bath. He remained only a week in the Infirmary, the giddiness and unsteady gait having disappeared. He had no fits whilst under treatment; previously, they were of daily occurrence.

II.—DISEASES OF THE ORGANS OF RESPIRATION.

There were four cases of laryngitis, and one death; twenty-nine of bronchitis, one death; two of hemoptysis; forty-eight of phthisis, and fourteen deaths; seven of pleuritis; two of empyema, one death; twenty of pneumonia; seven of pleuro-pneumonia, and two deaths.

Laryngitis.—Two of the cases were acute, and the others chronic. I quote a summary account of one of each class.

Case V.—Acute Mucous Laryngitis—Aphonia—Treatment by emetics, leeches, and counter-irritation.—*Mrs. M—*, aged 48, admitted January 5th.—During four years had been subject to similar attacks. The present one commenced about three weeks previous to admission, with “a severe cold;” within the last few days she has been affected with severe dyspnœa and complete aphonia. She refers seat of constriction and pain to the upper part of larynx. The posterior fauces not much inflamed. Pulse 104; skin hot and dry. *Emetic, to be followed by one drachm of solution of tartrate of antimony every six hours.*

Next day breathing was somewhat easier, but still very difficult. *Six leeches over larynx, continue antimonial solution.*

The emetic and leeching were repeated next day. On the 11th she was much improved. *Blister to nape of neck, and the leeches repeated.*

On the 29th she felt quite well; voice restored, but a little husky. Dismissed cured on 14th February.

Remarks.—In this case, probably, the mucous membrane was only involved; however, from the number of the former attacks, and from the obstinacy of the present, perhaps some amount of effusion, or congestion, existed in the sub-mucous tissues. The other case was almost similar, and the same plan of treatment was adopted, with the same result. Both patients were kept nearly a fortnight in the ward after all the symptoms disappeared, from the conviction that, had they exposed themselves to the inclemency of the weather, relapse would have occurred.

I have, during several years, employed the same treatment in acute mucous laryngitis, and with more success than I found following general bleeding. I have sometimes thought that, after the abstraction of blood, effusion about the tissues inflamed seemed to be increased, and the urgency of the symptoms much aggravated. I can confidently recommend the antimonial emetic in this disease.

In the case quoted, the dyspnoea, before its administration, was so urgent as almost to demand an operation; after vomiting, the relief was most manifest. The good effect should be maintained by the free use of the solution.

Of the two chronic cases, one died. He only lived about thirty-six hours after admission. The symptoms were most urgent, and the examination of his chest left no doubt of the existence of extensive destruction of lung by tubercle. He had laboured under the disease three years, with temporary improvement. About three weeks previous to admission, he was seized with a severe aggravation of difficulty of breathing; this was partially relieved by treatment. A few days before admission, he relapsed. When admitted to the ward, he could only breathe with the greatest effort, and speak in faintish whispers. Though the condition of the lung did not promise any permanent recovery, yet it was thought that laryngotomy might spare his life for a time. He would not, however, submit to the operation. A blister was applied to nape of neck, six leeches over larynx, and an emetic exhibited. No benefit followed. On inspection after death, extensive ulceration and vestiges of acute inflammatory action were seen within the larynx, and extending into trachea. The left lung contained several cavities of considerable size, and extensive deposit of tubercle in all stages.

The other case afforded a well-marked example of the disease as it usually presents itself in the chronic form. The treatment consisted principally in local depletion, and blistering the nape of neck. The patient was dismissed very much improved.

Bronchitis.—Among the twenty-nine cases of this disease, we had every variety, both as to extent and duration—acute, sub-acute, and chronic. Patients were admitted in all degrees of the congestive and effusive stages. Some cases were very trifling, and others most severe and protracted; many of the capillary form, with and without pulmonary collapse. As regards the comparative value of active and expectorative treatment, I am inclined to think most favourably of the latter. By the active treatment, I allude to local bleeding, blistering, purging, and nauseating doses of antimonials. By the expectorative, I mean the use of small doses of ipecacuan and nitrate of potass, one grain of the former to ten grains of the latter, three times a day, sinapisms to chest, and an opiate at bed-time. No selection of the cases, as regards severity, was made in the adoption of the respective plans of treatment; so that cases as similar in extent of disease and duration, as it is possible to find in this disease, were submitted to the opposite plans, and the result has strongly impressed me with the belief that the expectorative method is the best. The patients so treated were much sooner well than those who were placed under the more active measures. One chronic case ended fatally. No inspection could be obtained.

Hemoptysis.—This affection is seldom a primary one, frequently the concomitant of tubercle in the lungs. In these two cases, however, minute examination of the chest failed to detect anything abnormal. In both patients, the discharge of blood followed severe falls. The treatment consisted in local bleeding, acetate of lead, in conjunction with opium, and ipecacuan. One grain of each, given in the form of powder or pill, I have found more serviceable than any other remedy in such cases. I confess, however, that it is quite impossible to say, how much is owing to the natural suppression of the bleeding, or how much to the medicine. I may add, that I have no confidence in gallic acid in hemoptysis. I have, however, found it useful in other forms of hæmorrhage.

Phthisis.—This disease has been the cause of our high mortality. Several patients were admitted in the very last stage; others, in consequence of the supervention of bronchitis and pneumonia, and when these superadded diseases were removed, the patients left the wards. None of these cases are included under the head of pneumonia or bronchitis. The treatment adopted in these complicated cases, consisted of blistering the chest, the exhibition of small doses of ipecacuan and nitrate of potass. In three cases, where the pneumonia was extensive, and the tubercle in an early condition, small doses of protiodide of mercury was given with the best effect; when the acute symptoms subsided, cod-liver oil. The result was highly satisfactory. In the uncomplicated cases, cod-liver oil, good nourishment, a little wine, and mild counter-irritation, were the remedies employed.

Of the fourteen deaths, twelve inspections took place. The lungs were always found extensively diseased. In some, uncommonly large cavities existed. In one case, the upper lobe of right lung was completely excavated, forming an immense cavity, which was traversed by a network of fibrous bands. In middle lobe of same lung, several cavities existed, one of which was filled with a clot of coagulated fibrin, and in another was found a small aneurismal dilatation (about the size of a pea), of an arterial branch. In several of the cases, large cavities were detected, some in the process of contraction, others completely collapsed, and some filled with concretions. In all the *post-mortem* examinations, except one, the kidneys were found more or less the seat of fatty degeneration. One case presented the best specimen of the large fatty kidney that I have ever seen. Both organs were perfectly degenerated, except small portions about some of the pyramidal bodies. From the frequency with which I have found this renal lesion associated with phthisis, I am led to consider it as the most frequent concomitant of the disease.

The patient to whom I have alluded, did not exhibit, during life, any symptom indicative of the diseased condition of his kidneys. He was admitted in the last stage of phthisis, much ema-

ciated, and complaining more than usual of sickness and vomiting. These symptoms should always excite suspicion, and lead to an examination of the urine, which I have sometimes found albuminous, but frequently without a trace; however, oil globules in abundance have been always seen among the epithelial debris. Though even the early detection of this renal degeneration, would not likely enable us to do much to save the patient, yet, if discovered at the onset, its progress might be retarded, and in this way the patient's life considerably prolonged. I therefore respectfully direct attention to the matter. It is worthy of remark, that in such cases we rarely witness the train of symptoms, which usually distinguish the uncomplicated forms of albuminuria.

Pleuritis and Empyema.—None of the cases presented any peculiar character. The cases of pleuritis were treated by mercury and blistering. The result was highly satisfactory. The fatal case of empyema was merely sent into the Infirmary to die—a circumstance of frequent occurrence, and one that cannot be too keenly censured. It is great cruelty to expose poor patients, in a dying condition, to all the annoyance and suffering of removal from their place of residence to the hospital. In some instances, death has taken place before the patient reached the ward.

PNEUMONIA.

Case VI. — Acute Pneumonia — Treatment, mercury and stimulants — Cure. — *J. O'N* —, aged 23, of robust appearance, admitted March 17th. — Eight days previously he had a shivering fit, and, at same time, felt a dull pain in the right side of chest. On examination, percussion detected considerable dulness at the base of right lung, extending upwards to axilla, and the stethoscope discovered, at the same point, a fine crepitant rale. On the left side the respiration was puerile, and mixed with sonorous rales. Expectoration scanty, tenaceous, and tinged with blood. Pulse 120; tongue foul; bowels regular. *Two grains calomel, half a grain opium, and half a grain ipecacuan every six hours.*

On the 20th, he appeared much exhausted. Pulse quick and feeble; respiration laborious; congestive lividity of lips and other vascular parts of face. *Small doses of carbonate of ammonia; omit the mercury.*

Next day he had rallied, and on the 9th April he was dismissed cured, having been twenty-three days under treatment.

Commentary.—Eight cases out of the twenty, were of the same character as the one now quoted. Cupping to the extent of twelve ounces was ordered in two of the more robust habits, during the effusive stage of the disease; in other respects, the treatment was similar, and with equally favourable results. In five of the cases, from the fifth to the seventh day, the same symptoms of depression made their appearance as in the case quoted. This I have found to be of very frequent occurrence in pneumonia. The same

phenomena have been observed by Cullen, and Dr. Cleghorn of this city, and others; but the treatment which Cullen recommended, differed very essentially from that adopted in these cases.

If we carefully examine cases of pneumonia, we find that, when the stage of red hepatization has been reached, the pulse often falls; the patient expresses himself better; but, in a very short period afterwards, his breathing becomes more difficult, pulse feeble and quick, cough frequent, mucous rales are heard extensively over chest, and the face puts on a livid aspect. The explanation of this state is to be found, I think, in the effect which the consolidation of the effusion has upon the circulation in the minute vessels of other parts of the lung. Congestion of these vessels must take place; this will lead to effusion into the smaller bronchii, hence the mucous rales; at same time oxidation of the blood is thus prevented, hence the lividity and congestion of face and lips. To bleed a patient under such circumstances, in my opinion, would destroy his chances of recovery. We need not, therefore, be surprised to find Cullen stating, that, when the termination of this disease proves fatal, it is from the "third to the seventh day." Stimulants to give power to the heart are unquestionably the proper remedy.

Case VII. — Acute Pneumonia — Treatment by cupping, calomel and opium — Stimulants — Recovery. — P. B., aged 18, a labourer, admitted Jan. 24. — Illness of four days' duration. Commenced with a rigor and febrile symptoms. Cough severe. Expectoration frothy, tenaceous, and rusty-coloured. Percussion elicits a dull sound over the greater portion of right lung, and also in axillary region of left. Over whole chest sonorous and sibilant rales are heard, accompanied, in the neighbourhood of dull portion, with a fine crepitant rale, which attends the sound of inspiration. At the base of right lung anteriorly, some slight friction sound also heard. Impulse of apex of heart felt to the right of the sternum. A general throbbing of whole chest perceived. Pulse 132. Bowels confined. Cupping between the scapulae to eight ounces; purgative.

Next day the friction sound was more audible over right side. Pulse quicker and feeble, but regular. Respiration almost wholly abdominal. *Blister to anterior part of thorax. Fifteen grains of calomel immediately. Three grains of calomel and six grains of Dover's powder every six hours.*

Next day no improvement. Lips and cheeks livid. Loud mucous rales heard at some distance from his bed. Respiration most laborious. Pulse 130, feeble. Bowels open. *Five grains carbonate of ammonia every four hours. Mercurial ointment to blistered surface.*

In consequence of diarrhoea occurring, the calomel was intermitted till the 20th. At this date he had made considerable improvement. Extensive dulness, however, existed over both

sides of chest. Bronchitic rales nearly gone, and no vesicular murmur heard at dull portions. The calomel was resumed. A few days afterwards its action was evident on the gums. It was then suspended. After this, rapid improvement took place, and he was dismissed well, on the 20th February, having been five weeks under treatment.

Commentary.—There were three cases nearly as severe as this lad's. One had the entire left lung involved. In none, however, did there exist the same amount of pulmonary congestion. During the first few days of the attack, the "throbbing pulsation of chest," described by Graves, as indicating extensive congestion of the thoracic viscera, was well marked. The bleeding did not seem to influence the course of the disease. On the third day after admission, the seventh of the disease, the state of great depression took place to which I have already alluded, attended by extensive effusion into the bronchial tubes. The condition of the patient was certainly perilous. The exhibition of the stimulant was most useful, as I have always found it to be under similar circumstances. In this case, as well as in several of the others, the disease was complicated with bronchitis from the first; probably it had the precedence. These cases I have always found troublesome and dangerous. In such severe attacks, I have been in the habit of commencing the mercurial treatment by a large dose of calomel, from fifteen to twenty grains. I conceive the practice to be useful, principally in determining to the abdominal organs.

In the three cases to which I have referred, as being similar to the one quoted, the treatment consisted of mercury and blistering, with the temporary use of the carbonate of ammonia. The remaining seven cases were of a more chronic character. Solidification had occurred previous to admission. They were treated by mercury and counter-irritation.

Pleuro-Pneumonia.—In this complication, the treatment was similar to that which was employed in simple pneumonia. In five cases with success. One of the fatal cases was admitted in the last stage of gray hepatization; in fact, the poor patient was dying. The other died in consequence of the absorption of purulent matter. I beg to quote both cases, so that their exceptional character may appear obvious.

Case VIII.—Pleuro-Pneumonia of right lung, ending in Encysted Empyema—Absorption of purulent matter into the blood—Death—Inspection.—*J. M., aged 24, was admitted Feb. 9.*—He had well-marked symptoms of pleuro-pneumonia of right side, at the inferior anterior region. The disease was of ten days' duration. He was put under calomel and opium, and had a blister applied. He seemed to be doing well till the third day after admission, when symptoms of depression and severe diarrhoea made their appearance. He rapidly sunk, and died the following day.

Inspection.—Strong adhesions were found to exist between the pleural surfaces of right side, about the mammary region. On separating these adhesions, about a teacupful of purulent matter was found in a sac formed by the pleural adhesions. The pulmonary tissue around this was condensed to the extent of about a quarter of an inch in depth, having the leathery appearance which is usual in such cases. A portion of the lung was in a state of gray hepatization, and contained purulent matter, some of which was likewise found in the large veins.

Commentary.—This case originated in intense pleuritis, ending in the formation of pus, which became encysted by the formation of adhesions between the pleural surfaces, the pulmonary structure becoming secondarily affected. This seems to have been the condition of the patient when he was admitted. Three days afterwards, urgent symptoms made their appearance, great depression, and severe diarrhoea, death taking place within sixteen hours. The morbid appearances which were detected in the chest did not satisfy me, as being sufficient to account for the sudden death. Many cases occurred which exhibited a much larger amount of disease in the pulmonary organs, and yet recovery took place. From the rapid termination of the case, I suspected that some purulent matter had become absorbed into the circulation. The mesenteric veins were examined carefully, and several small clots of a fibrinous appearance, about the size of peas, were found. Dr. Aitken, our excellent pathologist, examined these, and found them to contain purulent matter, thus confirming the truth of my suspicion. It has often occurred to me, that the sudden and unexpected termination of inflammatory diseases may arise from a similar cause. In cases of this kind, I would strongly urge a careful examination of the large veins.

Case IX.—*Pleuro-Pneumonia of left lung, involving the lower lobe—Chronic Emphysema and Collapse of right lung—Death—Inspection.*—*S. S., aged 47, a labourer, admitted March 16.*—Eight days previously had a shivering fit, which was soon succeeded by general feverishness, and a sharp pain in the right side. On examination of chest, extensive dullness detected over two-thirds of left side. In this situation, respiration bronchial, mixed with mucous and submucous rales. Expectoration profuse and frothy, having a prune-juice appearance. Pulse 120, feeble. Tongue coated. Bowels regular. A large blister was applied to the left side, and he had three grains of carbonate of ammonia every three hours. He was also ordered calomel and opium, two grains of the former and half a grain of the latter, every six hours. No improvement took place, but the reverse. He died on the morning of the 20th.

Inspection.—On opening chest, the lower lobe of left lung was found in a state of gray hepatization. Pleuritic effusion of lymph existed. On the right side, the vesicular structure of the lung

was completely destroyed; large emphysematous cavities existed, some as large as a hen's egg; the non-emphysematous portions were collapsed. Indeed, the lung had become a mass of air-bladders, the septæ between which, being formed by the compressed pulmonary tissues.

Commentary.—This case seems to have originated in the pulmonary structure, and extended to the pleura. The enlarged consolidated lung could not fail to induce congestion of pleura. It is worthy of remark, that the upper lobe of left lung was the only portion of healthy respiratory organ the man possessed. Evidently, during several years, the right lung had been useless. Still, however, he was able to follow his occupation as a labourer. When admitted, no hope could be entertained of recovery under any circumstances.

General Remarks.—As pneumonia and pleuro-pneumonia are closely allied, both in a pathological and therapeutical point of view, I shall confine my remarks under one head.

TREATMENT.

In the more acute cases, the treatment consisted of local bleeding, use of mercury, blisters, and occasionally stimulants. In the milder and more chronic cases, no blood was abstracted, mercury and counter-irritation being employed. This plan of treatment is founded on the pathological conditions that exist, and the well-ascertained therapeutic effects of the remedies mentioned. In a practical point of view, it is useful to divide the disease into four stages, each being characterized by certain pathological conditions, and demanding considerable modification of treatment.

1. *Hyperæmic Stage.*—The patient complains of a rigor, followed by febrile excitement, pain of head, and often without any special uneasiness about pulmonary organs. There is no dulness on percussion. Auscultation detects merely an exaggerated or puerile respiratory murmur. The object in this stage is, to remove congestion. Moderate bleeding is one of the most powerful agents in the accomplishment of such an object. Purgatives are also most useful. Unfortunately, we seldom see patients in this stage. If we do, we frequently overlook the pulmonary congestion, under the impression that an attack of some kind of fever is threatened. I believe that many of the so-called cases of "ephemeral fever" are instances of this first stage, resolution being effected either by the powers of nature alone, or assisted by the purgative, diaphoretic, or other evacuant prescribed. It must not be considered that I view "congestion" as identical with "inflammation." I merely recognise it as an associated pathological condition, not the diseased action itself.

2. *The Effusive Stage.*—Vascular turgescence is soon followed by exudation of the *liquor sanguinis* into the air-vesicles and surrounding cellular tissue. In this stage there is some trifling

amount of dulness on percussion, and auscultation detects the *peculiar fine crepitant rale*; breathing becomes oppressed, cough troublesome; the expectoration exceedingly tenacious, of a dark olive colour, and often "rusty," sometimes containing pure blood. The object of treatment in this stage is to promote absorption. Moderate bleeding will prove highly useful. Sinapisms to chest and purgatives are also of much utility. Though it is advisable to commence the use of mercury in this stage, yet, from the rapidity with which the disease passes into the third stage, the drug can never prove of much, if any benefit, in the removal of this fluid effusion, which, we must not forget, may often be effected by the unassisted action of the absorbents. It is our province, however, to assist the natural efforts. I repeat, that *moderate* local bleeding is among the best means which can be employed. Excessive loss of blood might prove exceedingly injurious, by depressing the action of the heart, and thus induce passive congestion, and consequent effusion.

3d Stage.—Red Hepatization.—When the liquor sanguinis does not become absorbed, its fibrin, and probably also its albumen, coagulate, fill up, and obliterate the air-vesicles. This stage is recognised by well-marked dulness on percussion, absence both of vesicular murmur and crepitant rale, the presence of bronchophony, bronchial respiration, and increased vocal fremitus. The object of treatment in this stage is to promote the absorption of this deposit. Bleeding will not prove of much use in this respect. If the disease threaten to involve new portions of the lung, a circumstance of frequent occurrence (indeed all the three stages may exist in the lung at the same time), a moderate cupping will prove most beneficial. Great caution, however, must be exercised with such patients. If the powers of the constitution be reduced too much, there will be great risk of inducing purulent degeneration both of the deposit and pulmonary tissue.

In this third stage, mercury, from its well-known powers in promoting absorption, is unquestionably the most suitable remedy. It should be commenced early in the disease, and continued till the gums become tender. I have sometimes ordered calomel, at others the protiodide, and in chronic cases, the hydrargyrum cum cretâ. Blisters I also consider peculiarly useful in this stage. They act as derivatives, and also tend to promote absorption. About the fifth, to the seventh day of the disease, when the effusion becomes consolidated in the air-vesicles, and when fluid matters fill extensively the smaller bronchial tubes, symptoms of depression and general venous congestion often exhibit themselves. Under these circumstances, I have found stimulants, such as carbonate of ammonia, or a little brandy, highly beneficial, often, apparently, saving the patient from death.

4th Stage.—Gray Hepatization.—This stage is principally induced by certain changes that take place in the effused deposit.

The capillary system becomes obliterated, the nutrition of the pulmonary tissues interrupted, and softening and destruction take place. The object of treatment in this stage is to support the strength, and prevent extension of the disease.

In the present day, we are in the habit of contrasting the active treatment of pneumonia at a former period, with the milder methods which characterise that of modern times. We are very apt to conclude, that either the heroic plan must have been baneful, or that the disease must have undergone some important change. In the Edinburgh Monthly Journal for November, 1852, there is an able article on this subject, by that distinguished physician, Professor Alison. He very properly points out, that our improved means of diagnosis, enable us to detect many cases of chronic and subacute pneumonia, which would have been completely mistaken by those who distinguished the disease as represented by the nosological definitions. In comparing the relative effects of the active treatment with that of the present day, we must avoid the error of comparing together what is not comparable. Many of the cases which we recognise as pneumonia, would have been viewed by Dr. Cullen as *peripneumonia catarrhalis, vel notha*. He would not have subjected such cases, to the heroic bleedings recommended in peripneumonia.

The question still occurs—was the excessive bleeding recommended, and practised in the days of Cullen and subsequently, beneficial or deleterious? I am afraid we must state, that at least it was very unnecessary. Twenty years ago, excessive bleeding was very generally practised in the treatment of the disease. I tried it, and found that I lost *three* out of every *seven* patients. I still meet with cases in practice just as acute and severe as they were in the days of Cullen. I refer to some of the cases in the present paper. These quite accord with his nosological formula:—*"Pulsu non semper duro, aliquando molli; dolore thoracis obtuso; respiratione perpetuo difficili, sæpe non nisi trunco corporis erecto exercendi; faciei tumida, colore purpureo; tussi plerumque humida, sæpe cruenta."* Such patients get well without loss of blood, or at least with moderate bleeding, and their recovery is much more satisfactory, than that which took place under the old regime.

Mankind, generally, in matters of opinion as well as of practice, are apt to run from one extreme to another. At the present day, we find many able writers on pneumonia, denouncing blood-letting as most prejudicial, and either discarding mercury, or using it merely in alterative doses. I regret to read such statements emanating from high authorities. I hold that, in the congested and effusive stages of the disease, moderate local bleeding is one of the most valuable agents we can use, and in the stage of red hepatization, mercury, given to the extent of producing its constitutional effect, is of the greatest value. I have dwelt at some length on these points, with the view of urging great deliberation, before

such important remedies are discarded from practice. There can be no doubt that both were much abused at one time, but surely such *abuse* does not demand entire *disuse*.

Among the more recent writers on this subject, Dr. B. W. Richardson, an able pupil of my own, and Dr. Routh of London, have strongly opposed blood-letting on theoretical grounds. To discuss such matters would be inconsistent with the objects of this paper. I will content myself with a short allusion to the second ground on which Dr. Routh argues against blood-letting; viz., the MORTALITY. In his excellent papers, published in the Association Journal of June 8th, he has collected much important statistical information. I must refer my readers to the journal for the details. I shall only quote the results of the various plans of treatment:—

By Blood-letting alone, mortality from	14 to 20 per cent.
“ Tartar emetic alone, do.,	13 to 20 “
“ Blood-letting and tartar emetic combined, do.,	20 to 30 “
“ Chloroform, do.,	4 to 11½ “
“ Simple dietetic treatment, do.,	7 to 12 “

In no disease do we require to exercise such care, in forming conclusions as to the comparative merits of different plans of treatment, as in pneumonia. We very seldom find two cases alike, either as to extent, duration, constitution, sex, age, complications, or many other circumstances, all of which powerfully tend to influence the result of treatment. Making, however, every allowance, we cannot help concluding that the *active treatment*, especially the *bleeding and tartar emetic* combined, has been followed by the highest rate of mortality.

The cases treated by the plan which I advocate are, I confess, too small in number to admit of comparison. I may, however, be allowed to direct attention to the fact, that no death took place from simple pneumonia, and that the two fatal cases of pleuropneumonia should not be taken into consideration, from their peculiarly exceptional character. During the last sixteen years I have treated the disease on the same principles, and the mortality has been below two per cent. Age and sex, no doubt, have a very important bearing on the result. I beg, therefore, to state, for the information of those who are paying attention to this subject, that out of the 27 cases, 4 were females—that 15 cases occurred between the ages of 16 and 30 years, 5 between 30 and 40, 5 between 40 and 50, and 2 above 50; so that these patients enjoyed no particular advantage, as regards these two points. I have the presumption to think that the result would not have been quite so favourable, if the patients had been treated either by chloroform or simple dietetics, or, in other words, left to “chance and time.” I will yield to none in my estimation of the powers of nature, in removing the pathological conditions which exist in pneumonia. Fortunately for those infatuated people, who confide

the treatment of the disease to the exhibitors of "globules," the inherent physiological powers of the system are frequently adequate, without assistance, to remove the morbid action and its effects. Too often, however, patients have fallen victims to their own folly in this respect.

It is the distinguished office of the physician to excite, regulate, and otherwise assist these natural actions, by the proper and judicious employment of remedies, the therapeutical properties of which have been accurately ascertained. I contend that there is no disease in which so much can be done to *promote* a cure, and to *prevent* a fatal result, as pneumonia. We are far from being reduced to the humiliating position, either of trusting such cases to *pharmaceutical cookery* and "*Sarah Gamps*," or abandoning them to the *tender* management of the homœopathists.

(To be Continued.)

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

- I. *The Pathology and Treatment of Stricture of the Urethra, both in the Male and the Female.* Being the Treatise for which the Jacksonian Prize for the year 1852 was awarded by the College of Surgeons of England. By HENRY THOMSON, F.R.L.S., M.B., London, &c. &c. Pp. 324, and Appendix. London: John Churchill. 1854.

THE subject of stricture of the urethra is one which has called forth the attention and the best energies of many very able surgeons; and great differences of opinion have been entertained and expressed regarding it. Those differences, however, have been chiefly in regard to the plan of treatment, each surgeon advocating his own particular views in this respect, and recommending his own mode of practice. And so long as one set of surgeons maintain that there is no such thing as an *impermeable* stricture—that, in every case, however narrow the passage may be, an instrument may be forced through *into the bladder*—while another set hold the contrary opinion, so long must these differences in regard to the mode of treatment continue.

The number of treatises on strictures, of monographs on the perineal section, and pamphlets on the treatment by internal and external incisions, has been of late years very great; but these, so far from reconciling differences of opinion, have only been remarkable for bitter controversy, and not a little acrimonious discussion. Still, however, these may have been so far beneficial to the profession at large, and practically useful to those afflicted with the malady, by bringing into notice, and testing the value of, various modes of treatment for a disease appearing with many shades of character,

and giving rise to the most distressing symptoms, and, no doubt, requiring different modes of management in different cases. No surgeon will maintain that every case of stricture of the urethra must necessarily require the perineal section for its effectual removal; nor yet that all strictures can be overcome by the common or metallic bougie, by dilatation, ulceration, or by the *argentum nitratum*, or the *potassa fusa*. And, on the other hand, few surgeons will deny that the perineal section, or some other mode of getting into the bladder in the first place, and removing the stricture permanently in the second place, becomes absolutely necessary in cases of the disease of long standing, complicated perhaps with abscesses, fistulas, and a broken-down constitution, and which have resisted other and more usual modes of procedure. Much must necessarily depend on the nature and history of the case under consideration, one plan of treatment being suitable in one instance, while a very different mode will become necessary for another.

In the present work, the author enters very fully into the whole subject of stricture of the urethra. He treats—1. Of the anatomy and physiology of the male urethra, or the anatomical relations of the normal as well as of the diseased urethra, respecting which it is stated, in the preface, that “no pains have been spared in order to develop the best mode of conveying, as far as this can be done on paper, sound information upon this important subject. It will be seen that a great number of bodies have been examined to supply the facts related. One, out of several illustrative preparations which were sent into the College of Surgeons with the essay, contained portions of the corpus spongiosum from not less than twelve bodies, to illustrate a point in its anatomy.” 2. The classification, the pathological effects, the causes and diagnosis of stricture of the urethra. And 3. The treatment, which occupies three chapters, and comprehends the treatment by chemical agents, by external incisions and by internal incisions. There are also two chapters upon some of the *effects* of stricture—viz., urinary abscess, fistula, and retention of urine. The last chapter is devoted to stricture of the female urethra. An Appendix, of more than 100 pages, contains many most interesting and practical notes, and a table of cases, 200 in number, “each containing a very brief statement of the chief incidents in the history of the patient, and his present condition, condensed from fully reported cases only, upon the aggregate of which have been founded, in a great measure, the chapters on ‘The Symptoms’ and on ‘The Causes of Stricture.’”

In a work of such magnitude and extent, upon a subject which has employed the pens of so many authors, we can do little more than give a few extracts from the different chapters, from which our readers will be enabled to judge of the value of the work, and of the manner in which the author has discussed the various points connected with stricture of the urethra.

The "Anatomy and Physiology of the Male Urethra" is treated at great length in the first chapter, in which is detailed and minutely described the various parts into which the canal has been divided by anatomists—the prostatic, membranous, spongy, and bulbous portions, together with the glands, rugæ, mucous membrane, blood-vessels, nerves, fasciæ, and muscular tissues connected with the canal; and the observations and opinions of various anatomists are given, thereby rendering this chapter a complete anatomical description of the male urethra. The researches and observations of Sir Everard Home, Mr. Guthrie, Kölliker, Mr. Hancock, Müller, &c., are detailed, in some instances at great length, and also freely criticised, the author stating his own conclusions briefly and with becoming modesty. As an example, we quote his conclusions respecting the muscles concerned in the act of micturition:—

"There has been some disagreement and want of perspicuity in the statements of physiologists respecting the special functions of the muscles which surround and act upon the urethra, and as it is exceedingly important in relation to our subject to arrive at correct views respecting these functions, I have therefore been led to study them closely, and seek for information by independent observations of my own, the results of which, with the utmost deference to the high authorities from whom I may have been compelled in some particulars to differ, I beg leave to embody in the following statements and conclusions:—

"That the *urethra*, in its natural condition, and when not in action, forms a shut passage, the membranous walls of which, for the most part disposed in folds, lie in close approximation to each other, and are so maintained by the agency of contractile structures around.

"That the *act of micturition* requires for its proper performance a patent condition of the passage, and consequently the complete relaxation of certain muscles, forming a distinct group; viz., the anterior part of the levator ani (*levator prostatæ*), the compressor urethræ, the accelerator urinæ,* the transversus perinei, and the erectores penis.

"That this act is accomplished by the contractile power of the bladder itself, chiefly and primarily; the diaphragm and abdominal muscles co-operating to an extent which depends on the amount of force expended on its performance. The whole process in the healthy individual, in ordinary circumstances, always taking place in obedience to, and under the control of, the will.

"That cessation of the act, whether occurring involuntarily, because the bladder is empty, or suddenly by an act of the will, before complete evacuation has taken place, consists in the accurate closure of the neck of the bladder and urethral canal, through contraction of all the muscles forming the group described, which effort produces also, at the same instant, complete expulsion of the contents of the passage, which would otherwise leave it *guttatim*."—(Pp. 29, 30.)

And again, in relation to a point connected with hæmorrhage, and which is of much importance in regard to the mode of treatment by external incisions, afterwards considered, it is stated—

"There is a point, however, esteemed of importance in connection with practice, relating to the internal structure of the corpus spongiosum in the situation of the bulb, which has to be noticed. Owing to the free inosculature of the vascular passages with each other, which appertains to that structure, incisions

* Hence the term, 'accelerator urinæ,' is a misnomer. The muscle is in a state which is the reverse of action during the process of micturition."

carried into it have always been regarded as liable to give rise to considerable bleeding. But it has been alleged that the occurrence of this accident is rendered much less probable when such incisions are made strictly in the middle line, inasmuch as, with such precautions, a fibrous partition existing there receives the knife, and defends the vascular structures on either side. Most anatomical writers of the present day agree in affirming the presence of this partition. It is thus described by Ellis:—"The fibrous covering of this body sends inwards processes to form a network. Moreover, a piece projects inwards in the middle line opposite to the bulb, which reaches forwards to a short distance, and assists in dividing that body into two lobes." This account appears to be given on the authority of Kobelt, who published it in his work, entitled '*Die Männlichen und Weiblichen Wollust-Organen*,' in 1844. On the other hand, its existence has been wholly denied.* I have, accordingly, embraced several opportunities of making transverse sections of the bulb, and can most unhesitatingly confirm the statement that a partition exists, and may sometimes be traced forwards to within two or three inches of the external meatus. It is distinctly seen, in some instances, to be composed of two layers, with a faint dark line between them, indicating that the coherence of two bodies in the middle line, to form a single corpus spongiosum, is the typical formation, traces of which were present in all the subjects examined to a greater or less extent."

"That the entry of the arterial branch of supply at about a half or three-quarters of an inch before the posterior extremity of the corpus spongiosum, renders incisions at this point liable to become the cause of considerable hæmorrhage. That the existence of several fibrous partitions in the part posterior to the entrance of the artery, and especially one in the middle line, may tend to render incisions into that part of the bulb so defended, less productive of hæmorrhage, than in parts where these do not exist."—(Pp. 38-40.)

In the second chapter, upon the "Classification and Pathology of Stricture," the author begins by giving a definition of the disease, which, however, is not of much importance, provided the thing itself be exactly understood. He divides diseased contractions of the urethra into permanent or organic, and transitory, the latter being either inflammatory or spasmodic, then considers the various modes of classifying strictures which have been adopted by surgeons, the numbers, according to different authors, varying from two to seven. Mr. Thomson gives his reasons for adopting this division, concluding with the advice, that we shall do well "not to attach more importance to mere classification than it deserves, regarding it only as a useful, but subordinate and imperfect, means of contributing to the object we have in view, viz., the right and easy understanding of the subject under consideration."

It is well known by surgeons, that stricture, when it continues long and becomes permanent, producing a continued obstruction to the flow of urine, gives rise to certain anatomical changes in the urinary bladder, particularly hypertrophy of that organ, and, as a consequence, sacculi or cysts:—

"As a consequence of that fasciculated arrangement which the fibres acquire, interstices of varying size are observed between the bundles. These depressions

"* Professor Lizars, in the *Medical Times*, August 16, 1851, states that he has never seen this septum; that he has recently examined 'two bodies,' 'but could perceive no septum whatever,' and he presents a drawing denoting its absence."

become deeper, and the mucous membrane being driven in by the fluid pressure which is exerted upon them, is apt, in course of time, to form pouches, which are sometimes of very considerable size. One of these, after long-continued dilatation, may at length form a receptacle for the urine, having a capacity as great, or even greater, than that of the original bladder. . . . In some of these pouches it is not rare to find a collection of calculous matter, and in this manner are sometimes formed those encysted calculi which occasionally baffle the lithotomist."—(Pp. 65, 66.)

Any one who may read this chapter on the classification and pathology of stricture, must at once admit the great industry and patient perseverance which Mr. Thomson has devoted to the elucidation of the points upon which he writes. We quote the following conclusions at the close of the chapter:—

"In examining the museums named, I have personally submitted to a close and careful inspection of not less than three hundred preparations of stricture of the urethra, of which I possess notes made on the spot of two hundred and seventy, the rest being examples which, from decay or other circumstances, it was impossible correctly to classify.

"These examples may all be comprehended by the three following classes:—

"I.—*Strictures occurring at the Sub-Pubic Curvature; i. e., at the junction between the spongy and membranous portions and its neighbourhood.* . . .

"II.—*Strictures occupying the Centre of the Spongy Portion; i. e., a region extending from the anterior limit of the preceding, to within two inches and a half of the external meatus, and measuring, therefore, about two and a half to three inches in length.*

"III.—*Strictures occurring at the External Orifice, and within a distance of two inches and a half of it.*

"Lastly, I may confidently assert that there is not a single case of stricture in the prostatic portion of the urethra, to be found in any one of the public museums of London, Edinburgh, or Paris. I am disposed to believe that some observers have been deceived in reference to it, or that it owes its supposed existence to inferences drawn from the results of examinations of the living body, which can by no means be admitted as evidence on this subject. Two specimens only of the whole number have at any time been regarded as liable to be considered prostatic stricture. . . . At present, therefore, the existence of prostatic stricture appears to rest on the observations of Leroy, D'Etiolles, and Ricord. Its excessive rarity, to say the least, is at all events demonstrated. [It is almost unnecessary to add, that enlargement of the prostate, while it sometimes narrows, and frequently renders tortuous, that part of the urethra which passes through the gland, cannot be regarded as coming within the definition of stricture. That organic narrowing of the urethra only which commences within its own walls, and not that which is caused by external tumour, being understood to constitute the stricture which, commonly affecting all other parts of the urethral canal, is not found in its prostatic portion."—(Pp. 87-89.)

In the chapter on the "Diagnosis and Treatment," our author gives minute directions for properly exploring the urethra and examining the stricture, in order to ascertain the nature of the obstruction, whether involving one portion of the canal or several, and whether it be permanent or merely temporary. The various instruments employed for this purpose by different surgeons, with their shapes and other properties, are explained, and their advantages and disadvantages pointed out. Other points absolutely necessary to be considered in the mode of management of strictures are not omitted—as, the use of belladonna, chloroform, rest,

and regimen, the chemical state of the urine, &c. All these subjects are treated at length, and we think with much ability, evidently showing that Mr. Thomson has studied the whole carefully, and has acquired much practical experience in regard to them. Respecting the treatment by chemical agents, a short and concise account of the mode of practice adopted by the older surgeons, in their use of the potassa fusa and nitrate of silver, is given, and the conclusions are stated at the end of the chapter.

“ That these agents are never to be employed for the sake of their escharotic or caustic powers, properly speaking. That the nitrate of silver, lightly applied, exerts a salutary action on the diseased surface of the urethra, relieving inordinate irritability, and checking undue vascularity and disposition to hæmorrhage, as it does in similar conditions of the skin and mucous membrane in other parts of the body, and thus it becomes a useful adjunct to dilatation. That the potassa fusa, as a caustic, is considerably more active than the preceding, and is, therefore, more dangerous of application. If used at all, it should be only in very minute quantities, such as fractional parts of a grain, inasmuch as it is exceedingly difficult to limit the action of so powerful an escharotic. It may perhaps aid dilatation, and the eradication of some strictures, probably by facilitating the solution of some of their component tissues, when care is taken to employ it in obedience to the condition just named.”— (Pp. 220, 221.)

Mr. Thomson is decidedly against the mode of treating stricture by cutting *within* the urethra, that is, the plan by internal incision—a plan which has been employed to a great extent, and many very ingenious instruments contrived by different surgeons for dividing the stricture. The great objection to all these instruments, and indeed to the plan altogether, is, that the operator has no means of seeing how far or what parts he cuts. Great mischief may result, and has resulted, from this practice, by injuring the parts surrounding the urethra; therefore Mr. Thomson considers it less dangerous “to lay open the perineum, and divide the stricture from without, thus giving free vent to noxious fluids of all kinds, than to wound the urethra from within, at or behind the bulb, as we run great risk of doing, when operating at six inches’ distance from the external meatus, and thus only make a channel for these matters into the erectile cavities and other structures around.”

Forty pages of this work are taken up in discussing and criticising the treatment by *external* incisions—a plan which has of late given rise to so much difference of opinion among surgeons. Two hundred years ago, Wiseman relates that a celebrated surgeon, in a case of retention of urine, made an incision “into the urethra, near the neck of the bladder.” Some time after, on the same patient, “the whole length, or nearly so, of the urethra, was laid open from without by incision in the middle line, dividing the scrotum.” This plan, therefore, of external incision is of old date, and Mr. Thomson details at length the mode of proceeding by various surgeons, from the time of John Hunter, down to the perineal section, or rather the “external division,” of Mr. Syme. It is no doubt well known that Mr. Syme does not adopt this

mode of procedure for the cure of the same kind of cases for which it was employed by the older surgeons, and is still employed by many at the present day. The old operation of cutting in the perineum was had recourse to in cases of stricture in which no instrument could be got through the canal—in *impermeable* stricture of the urethra. Mr. Syme considers there is no such case, and such an operation therefore is always unnecessary and improper. His operation consists in dividing the stricture from the perineum, upon a grooved sound previously introduced into the bladder. Hence Mr. Thomson very properly distinguishes Mr. Syme's mode of operating by the term "external division," the phrase "perineal section" having been long employed to point out a different plan of operating, and in the treatment of a different class of cases. Mr. Syme's operation is, "external division, as a curative means for certain strictures *which admit the passage of a sound.*" Mr. Syme's opinions are here discussed in a great spirit of fairness, and the writer seems more disposed to coincide with his views than are many eminent surgeons of the present day. After asserting that it is an incontrovertible fact, that the urethra is sometimes completely obliterated, he states the case in regard to impermeable stricture thus:—

"In the controversy which has been maintained on the subject, the oversight of a very simple fact has led to much unnecessary discussion. This I will endeavour to make apparent. Mr. Syme denies the existence of 'impermeable stricture,' declaring that he has never met with one through which, the urine passing outwardly from the bladder, he has not been able fairly to pass an instrument in. He has been supposed to deny the existence of an obliterated urethra. This, however, he seems never to have done, so far as I am able to judge. But it appears that, in the North especially, a distinction is made between stricture and traumatic obliteration, which is not invariably recognised here. . . . Mr. Liston was accustomed to draw the same distinction. In a clinical lecture given during the winter session of 1835-6, he used the following words:—'It has been proposed in what are called '*impassable strictures*;' but there are no strictures impassable that I have ever seen, for *where any water comes away* you can, by patience and perseverance, get a catheter through sooner or later, to introduce, &c.' At this time Mr. Liston had never performed any operation for retention of urine beyond the passing of a catheter. He was compelled, however, on one occasion afterwards, to puncture the bladder, as well as to perform perineal section several times in cases of ordinary stricture, in which he failed to pass a catheter, and then he adopted precisely the same operation which has been referred to as recommended and described by Mr. Guthrie, and the directions for performing which he gave in his '*Operative Surgery.*' Sir B. Brodie also recognises, to some extent, the same distinction, as may be seen by reference to his work.

"From the numerous pathological facts afforded by our museums, it appears then that obliteration of the urethra does exist; that it is unquestionably exceedingly rare; lastly, that it is very doubtful if strictures which are not of traumatic origin ever arrive at that condition. We have no evidence at least to show that they do.

"Mr. Syme's assertion then amounts to this, and can be understood to mean no more, viz., that wherever the urine passes out by the external meatus, a catheter may be got in. Thus he writes: 'As to the question of '*impermeability*,' I simply maintain, that if the urine passes out, instruments may always, through

care and perseverance, be got in beyond the contraction. It should be observed that the case here is quite different from that of a distended bladder requiring *immediate* relief. I have never maintained that in such circumstances the introduction of a catheter was always practicable,' &c. And I think that there are few surgeons who possess experience and dexterity in the use of the catheter who will deny the truth of this axiom *as a rule*; and such, if repeated opportunities are afforded of making the trial, will succeed in overcoming very nearly all the cases which come before them by fair means. . . . Nevertheless, taking the broadest view of the subject, regarding the fact that men of known and acknowledged ability and great experience have now and then failed, I shall not dare to assert the impossibility of occasional exception to this rule. . . . Most assuredly the cases are few, in which a sound may not be passed by a skilful and persevering operator, perhaps fewer than they have generally been supposed. For my own part, I am free to confess that I have assuredly learned one thing; viz., that confidence in the power of the catheter, and perseverance in its use, constitute the secret of successful practice in its application. I can only not venture to assert, that whatever may have been my fortune hitherto, some future experience may not compel me to admit the existence of impermeable stricture, although it be manifest, at the same time, that total obliteration does not exist." — (Pp. 248-52.)

We cannot dwell longer upon this subject, or quote further from Mr. Thomson's treatise. He seems to advocate Mr. Syme's operation, and to consider it an improvement upon the other means of treating this very painful affection. Out of 120 cases in which the operation has been performed, seventy times by Mr. Syme himself, the remainder by various surgeons, four deaths only occurred, none of which were in Mr. Syme's practice; and in regard to these it is stated—"On examining attentively the circumstances of these, it does not appear that death was caused by any accident necessarily connected with, or peculiar to the operation, but by one which is known to attend incisions or lacerations of any kind." "The cause of death was undoubtedly pyæmia: it was not hæmorrhage; and although much has been said respecting this, I believe it has never been directly stated by any writer to have been so in a single instance." Further, with respect to hæmorrhage, Mr. Thomson states that he was determined to ascertain the facts relating to it in connection with the cases operated on, and having done so, he says—"I have no hesitation in affirming, after a full examination of the evidence relating to Mr. Syme's cases, that the statements which have been made by some writers respecting hæmorrhage have been greatly exaggerated, if not, in one or two instances, wholly unsupported by facts."*

The subject of the treatment by external incisions is concluded by the following remarks:—

"In bringing the consideration of this subject to a close, I confess that these remarks have become extended beyond the limit of the original design, notwithstanding every effort on my part to render them as succinct as possible. But I have felt impelled to discuss the subject fully, if at all. In the present state of divided opinions, and conjectures respecting it, it was impossible to escape the

* "For those who desire to see a considerable portion of the evidence in relation to this subject, condensed and presented in one view, see 'British and Foreign Medico-Chirurgical Review,' 1851, No. XV., Article viii."

duty of making a laborious, careful, and, as far as possible, unprejudiced examination of the evidence presented in relation to the subject, unless, indeed, its consideration were given up altogether, an alternative which could not for a moment be entertained. I have been compelled to arrive at conclusions somewhat at variance, perhaps, with my own preconceived notions; but I have the satisfaction of believing, that a fair and correct exposition of this much 'vexed question' has been presented, as the result of what has certainly been the most arduous portion of my labours in relation to this work. I have at least performed it with most honest intentions to eliminate the truth, as far as has been possible; whether altogether successfully or otherwise, time only, as it augments our experience, can determine."—(P. 275.)

We have no space left to consider the remaining chapters on "Urinary Abscess and Fistula," "Retention of Urine depending on Stricture," and on "Stricture of the Female Urethra," which are treated at considerable length, in a manner highly creditable to the author's talents and industry. Indeed we do think that Mr. Thomson has discussed all the points connected with stricture of the urethra with great ability, so that his treatise is one of much practical interest, and cannot fail to be useful to the profession. It amply justifies the College of Surgeons in awarding to him the Jacksonian prize.

II. *The Pathology and Treatment of Leucorrhœa.* By W. TYLER SMITH, M.D. London: 1855.

IN recent times there has, in the whole range of medicine, been no more fruitful source of polemical discussion than leucorrhœa. The reintroduction in the present century of the use of the speculum matricis into ordinary practice, revealed to obstetricians a new set of recondite lesions. The greatly increased frequency of physical examination of the female organs to which this gave rise, resulted in the proclamation, if not in the discovery, of various new disorders of these parts. The examinations necessary for their investigation were easy to men of the meanest capacity. The new field of practice was, as might be expected, entered upon with the greatest zeal and alacrity by a crowd of doctors. The cases were all in a class, having the greatest development of our common emotional feelings, but having also the peculiar weaknesses implied in the very name of *woman*. In such a field, it was not to be wondered at that enthusiasm should be engendered; it was much to be lamented that this should so soon have degenerated, in the case of many physicians, into great imprudence, and in not a few into gross charlatanry. Women, enervated by luxury, overpowered by hysteria, or weakened by disease—new doctors ascribing all sorts of complaints to disorder or disease of the womb—new diseases found to be alarmingly frequent, inflammation, ulceration, eruptions, hypertrophy, engorgement, displacement,

twistings, strictures—new instruments of alarming or imposing appearance, speculums, pessaries, probes, syringes, and a host of others—what could be expected? The name of the uterine mania began to be applied to the state of the public mind. Alarm was excited for the safety of female modesty, if not of female purity. The dogmas and conduct of the professional encouragers of this state of matters, became a subject of discussion in the medical journals. Like other errors, they could not bear the simple light. The discussions were often painful, if not disgusting, and often conducted in a bad spirit; but they have fortunately been, in a great degree, effectual in withering the exuberant proportions of the so-called uterine mania, and curbing the ardour of its professional abettors, who saw no difference, æsthetically, between the examination of the throat or the pulse and the examination of the womb, and who would have wished to assimilate, in freedom and familiarity, the conversation of the two sexes to that of individuals of the same sex.

In the midst of all this excitement, numerous physicians did not desert the strict path of duty, but, by careful observation and research, conducted in a spirit becoming the professors of a noble science and art, sought to establish the real nature and importance of the lesions found in leucorrhœa. These labours have been crowned with a great measure of success. It would be invidious to place the laurels on any individuals where so many have distinguished themselves, and where the exertions of the most successful have not always deserved unqualified praise. But the steps of progress in recent times may be best recognised in our country, by noticing, first, the general nosological descriptions of Sir Charles M. Clarke, then advancing to the observation of the abrasions and inflammations of the uterine neck, to which Dr. Henry Bennet has succeeded in attaching his name, and lastly, arriving at the minute, nay, microscopical account of these lesions, and appreciation of their nature, by Dr. Tyler Smith, in the work under our notice at present.

Just as these last and conclusive observations on leucorrhœa have been published, we find that another step in progress has been begun, and, as is not unnatural, it assumes, at first, a negative form. Leucorrhœa is now known and measured: it retains its importance as a frequent and debilitating disease; but it is discovered that in it we do not find, as was originally believed, the cause of the great mass of ordinary uterine ailments. Many of these remain after its cure, or after removal of the obvious lesions of the uterine neck. Many of these are found without, nearly as often as with these lesions; and attention is being more directed to the condition of the entire organ as the real cause of frequent aggravated cases of disease. But on this subject we must refrain from now entering.

Twelve chapters divide among themselves the whole work, but

the first five contain almost all the marrow. The last seven are, in some degree, wordy, not very closely reasoned, and not conclusive in their arguments.

In the first chapter, we have a minute account of the superficial layer of the mucous membrane, of the vagina, and os uteri. The whole of this tract is covered by squamous epithelium, beneath which are distributed numerous villi, which at the os uteri have a filiform shape, and are observed to contain vascular loops in their interior. Over the surface are distributed the openings of numerous mucous follicles, which are abundant in the lower part of the canal, but almost, if not altogether, disappear on the upper, and have not been observed on the os uteri. The second chapter describes the rugæ and columnar arrangement of the canal of the cervix, with its very numerous glandular follicles. The epithelium of the os uteri and the external portion of the cervix is, like that of the vagina, constantly squamous; the epithelium, just within the os uteri, is cylindrical, but not ciliated. The epithelium of the follicular surface of the canal of the cervix is cylindrical or dentated, like the epithelium just within the os. It is also ciliated low down in the cervix, but not at its very lowest part, and the ciliated character is continued into the cavity of the fundus uteri. The villi found in the upper portion of the cervix are covered by dentated epithelium, just as is the case with the villi of the lowest part of the cervix.

In the third chapter, we have an account of the healthy secretions of the genital passages:—

“The sebaceous follicles, or fat glands, of the vulva and external parts of generation, secrete an oily matter, which, when it is secreted in unusual quantities, or in persons not observing strict cleanliness, may be seen gathered between the folds of the nymphæ as white fatty matter. The secretion of the mucous glands of the ostium vaginæ is said to be connected with the sexual function, and to be increased under excitement. The mucus of the vaginal canal is not found in any considerable quantity in the healthy subject; it is only secreted in sufficient quantity to keep the mucous surface in a state of lubrication. It lies upon the mucous membrane as a milky fluid, containing quantities of small curdy points or masses, and consists of a transparent or semi-transparent plasma, containing an abundance of scaly epithelium and its debris. . . . The plasma of the vaginal mucus appears, when first secreted, to resemble the plasma of the cervical mucus, but it is less viscid and tenacious. It is only after it has lain a short time upon the vaginal surface that it becomes curdled. The vaginal mucus is, as Donnè first remarked, distinctly acid; and it is to the effect of the acid coagulating the albumen of the mucus, and not to the presence of epithelium, that its curdled appearance is attributable. The margin of the cervical canal, and the limits of the villi, covered by squamous epithelium, and the commencement of the villi covered by cylinder epithelium, seem to mark the division between the acid and alkaline secretion, and is thus a confirmation of the rule laid down by M. Donnè.”

“In the unimpregnated condition, when the cervix uteri is found perfectly healthy, little or no discharge is seen issuing from the cervical cavity; but when the labia uteri are separated, the canal of the cervix appears to be full of its peculiar secretion. In examinations after death, in cases in which the uterine organs are in a healthy condition, the mucous crypts and the canal of the cervix

are generally found filled with a clear viscid mucus, so as to entirely block up the passages from the vagina to the cavity of the fundus. . . . The mucus consists of myriads of mucous corpuscles, entangled in a transparent viscid plasma. The plasma is so tenacious, that the mucous corpuscles are found to be arranged in strings when placed under the microscope, and individual corpuscles are frequently seen to be elongated from the same cause."

In the fourth chapter, the author enters upon the subject of leucorrhœa. This he divides into two species. The first he calls epithelial. It is produced by the vaginal surface. The second he calls mucous. It is the product of the cervix uteri. He introduces this distinction by a comparison of the two sources of the discharge:—

"The lining membrane of the vagina approaches in organization to the skin. It is covered by a thick layer of scaly epithelium. It contains, in the greater part of its surface, few, if any, mucous follicles or glands. Its secretion is acid, consisting entirely of plasma and epithelium; and the chief object of the secretion is the lubrication of the surface on which it is formed. On the other hand, the lining of the canal of the cervix is a true mucous membrane. It is covered, in great part, by cylinder epithelium. It abounds with immense numbers of mucous follicles, having a special arrangement. It pours forth a true mucous secretion, alkaline in character, and consisting of mucous corpuscles and plasma, with little or no epithelium."

The mucous discharge is the more common and important. It is a glandular secretion:—

"Quantities of mucous corpuscles and oily particles, with particles of epithelium entangled in the viscid alkaline plasma which gives the mucus its clearness and consistence, are found. The clear mucus is seen at the os uteri, sometimes adhering to the os itself, at others extending through the vagina, and presenting at the os externum in the form of a string, and also lying upon the walls of the vagina, in the curdy or creamy state to which it is reduced by the action of the vaginal acid."

Sometimes the two kinds of discharge are mixed:—

"The secretion, in cases of vaginal leucorrhœa, generally consists entirely of epithelium, in every possible phase of development, mixed with acid mucous plasma. . . . When the vaginal form of leucorrhœa becomes very severe, the villi become affected; and not only is epithelium separated with extraordinary rapidity, but pus is formed upon the irritable sub-epithelial or villous surface, which, when mixed with the epithelial matter, can hardly be distinguished from the mucous corpuscles of the cervix mixed with scaly epithelium. In the second form of epithelial disorder, the epithelium is thrown off in large shreds or pieces, in which the pavement-like arrangement of the scales is perfectly preserved. These laminae frequently have upon them marks of the rugæ of the vagina, and somewhat resemble the cuticle, in cases of acute desquamation of the surface of the body. . . . Sometimes, on making a specular examination in these cases, the whole surface of the vagina is seen covered with a white coating, which may be removed by a forceps, in membranous pieces of considerable extent and thickness."

The fifth chapter is one of the most interesting. It points out the ordinary sequence of changes in cases of leucorrhœa. First, the excessive discharge, with inflammation; subsequently, abrasion, ulceration, induration, and hypertrophy. Here Dr. Smith has reaped very great advantage from the use of the microscope,

which has enabled him to describe, with the most refined exactness, the anatomy of the abrasion and ulceration of the cervix. This employment of such a valuable instrument is unexceptionable and admirable. But in another part of his work, Dr. Smith wishes to found diagnostic signs upon the microscopic examination of discharges. He would indicate that the practitioner could tell the seat of disease by the discharges, and has attempted by figures (See pages 38, 63, 64, 69, &c.) to illustrate this method. But we are certain that this is an unwarrantable stretch, the result of an injudicious wish to make the microscope do what it, as yet at least, cannot. The cervical and vaginal discharges of disease, even if not mixed, could not be satisfactorily discriminated from one another. Even on Dr. Smith's own showing, healthy cervical mucus contains epithelial scales, derived from the vagina. This will go far, even in health, to assimilate the two discharges. In disease, the mucus of both parts will contain globules, which Dr. Smith, or any one else, would be puzzled to sort or divide into pus and mucous globules. These considerations alone, apart from others, send us back to simpler and readier means of ascertaining the site of disease of the genital passages.

We refrain from entering upon the remaining chapters, which are far from being so complete, so closely reasoned, or so honourable to their author, as those we have noticed. They have served to fill up the book, and make a goodly, handsome volume. The work contains little that is absolutely original, most of the points of novelty in it having been made out previously by Robert, Donn , Whitehead, Robin, Huguier, Bennet, and others. But the author deserves the greatest praise for having himself, as it were, re-discovered the whole, re-analysed the subject, and set it down with ability in a body of doctrine, which will long retain its place in our literature. Every obstetrician, who wishes to be *au courant*, must make himself master of the contents of this work.

III. *On the Displacements of the Uterus.* By J. MATTHEWS DUNCAN, A.M., M.D., Lecturer on Midwifery, &c. Pp. 43. Edinburgh: Sutherland & Knox. 1854.

On the Statics of Pregnancy. By J. MATTHEWS DUNCAN, M.D., &c., &c. Pp. 20. Neil & Co. 1855.

THAT there is a fashion in physic, as well as in music and many other things, has been long ago asserted and believed; and many now go the length of saying that this extends to diseases, as well as to their mode of treatment. It is no doubt true, that for long we heard of little else but bilious disorders. The bile and the liver got the blame of all the morbid feelings incident to the human frame—of all the diseases to which the members of the faculty were

called. At another time, nervous complaints predominated, and every thing was owing to some derangement of the nervous system, or to some disease of the spine. Consumptive complaints also had their day, which will very likely soon revive again, as they were very lucrative to the quack, who promised to cure all incurable cases. Of late years, however, so far as the women are concerned, nothing has been heard of but uterine affections. Like Aaron's rod, which, we are told, swallowed up all the other rods of the ancient magicians, so the disorders of the uterus now swallow up the diseases of all the other organs to which women were previously liable.

Some forty years ago, or thereby, a young country practitioner met in with a case which puzzled him not a little. The patient, a female, aged 36, complained of difficulty, almost total inability, to pass urine; also, difficulty in ejecting the fæces, severe pressing-down pains, similar to labour pains, which increased the difficulty, and various uneasy feelings affecting the pelvic viscera. There was a tumour in the hypogastric region, which was somewhat painful on pressure. The young doctor examined this carefully, again and again questioned his patient, tried to analyse all the symptoms and ascertain the exact nature of the disease. Was she pregnant and in labour? was it a case of simple retention of urine? was it a polypus in the uterus? a fibrous tumour? or what was it? At last he thought of making an examination *per vaginam*. Searching for the os uteri towards the rectum, where it ought to be, he was met by a *cul de sac*. No os could be found. There was a solid tumour pressing upon the rectum, which he took for impacted fæces, or, it might be, a uterine polypus. He examined towards the pubis, but still no os uteri could be detected. The woman had borne children. She must, therefore, he argued, have a uterus, and a mouth to it likewise; but it was nowhere to be found. The symptoms increased in violence, the pressing-down pains were extreme, an ounce or two of urine was passed with difficulty, the tumour in the hypogastrium enlarged, so did that in the rectum. The catheter could not be got into the bladder. Instruments of all kinds were tried; but in vain. Older practitioners were now consulted, and although some half-a-dozen of them visited and examined the patient, no os uteri could be found; there was great difference of opinion as to the nature of the case, and no one made an accurate diagnosis. None of them had met with a similar case. Two teachers of midwifery, one of them of high reputation, had the whole particulars detailed to them, although they did not visit the patient. It was evident they had not seen a case of the kind, and they gave no opinion as to the disease, but only prescribed for the symptoms. At last an old practitioner, who had seen much of midwifery practice, pronounced, without seeing the patient, that it was most probably a case of retroversion of the uterus, and recommended that renewed

attempts should be made to reach the os uteri. The young doctor having got the hint, and been put upon the right tract, pushed his whole hand into the vagina, and with difficulty reached the os uteri high up above the pubis, got it down by force, pushed up the fundus, and delivered the woman of a foetus about the fourth month. A copious flow of urine soon followed, and all the morbid symptoms disappeared in a few days.

This case led the young practitioner to turn his attention particularly to displacements of the uterus; but although he had a considerable public and private practice, he did not meet with another similar case for twenty years, except one, in which, however, the organ was not nearly so much displaced, and the symptoms were therefore comparatively slight. He concluded, from all these circumstances, and one would think most justly, that this retroversion of the uterus was a very rare affection, and this opinion he probably still holds.

These thoughts of old time and old practice passed through our mind, when looking over the first of the two pamphlets named at the head of this article. They were both published in a contemporary some time ago, and are now printed in a separate form. We think they exhibit great industry, and not a little practical knowledge, on the part of the author. With respect to the one on "displacements," we are inclined to consider that Mr. Duncan takes a proper and correct view of these variations from the normal position of the uterus, not attributing to them, as some have done, too much in the way of producing morbid symptoms and diseased feelings, but maintaining that many of the minor malpositions are quite compatible with continued good health, and pointing out the fact, that great mistakes have been committed in attributing diseased feelings, which the patient may happen to labour under, to the displacement, when they are really owing to a very different cause. We quite agree with the author in the opinion expressed in the latter portion of the following quotation:—

"Many authors agree with Cruveilhier in maintaining that the displacement is of no moment, but that the disease is the uterine engorgement causing it. Others, with Dr. Simpson and M. Valleix, defend the contrary opinion. In my mind there is a conviction, based upon the study and observation of the causes, symptoms, and the results of different plans of treatment in these cases, that, as a general rule, displacement of the uterus, be it retroversion or anteversion, retroflexion or antelexion, or the first stage of descent, is only a symptom of another affection which has pre-existed—that although there may be minor symptoms connected with the displacement alone, yet the chief symptoms are not caused by it, and the main indications of cure are not to be directed against it. This side of the question is maintained by Cruveilhier, Dubois, Velpeau, Bennet, and others. In fact, the great frequency of these minor displacements (as abundantly attested by many authors), and the frequent incidental discovery of versions and flexions in treating women, or examining them for other affections, render it certain that they exist frequently without causing any symptoms whatever—that they are, in fact, consistent with perfect health. The so-called cases of displacement are those where, more or less in connection with it, painful symptoms have supervened. That the simple displacement is not the cause of its

so-called symptoms appears from considering the almost invariable displacement of the womb in early pregnancy, its enlargement and pressure in every direction, and the same circumstances in cases of uterine tumours, without any symptoms whatever. Moreover, even the prolapsus and procidentia of the womb frequently produce none of the so-called symptoms of the minor displacements, and may be quite harmless, except from the unavoidable secondary distresses consequent on the exposure of the organ."

But are these displacements, even the minor ones, really so frequent as they are reported to be? and even if so, are they properly to be considered *morbid*? are they to be looked upon as diseases, and capable of giving rise to derangement of function? As to their frequency, Dr. Duncan says:—

"Displacements of the uterus, although known and described by the most ancient authors, did not attract much attention from practical physicians in our days, till the publication of the researches of Schmitt, Schweighauser, Boivin, Bazin, and others. In 1843, Dr. Simpson's paper on this subject was read before the Medico-Chirurgical Society. He then pointed out the great frequency of displacement, and showed how it could be diagnosed and rectified by means of the uterine bougie. Since this time the subject has been unremittingly before the profession. But the greatest difference of opinion still prevails as to the true pathology and proper treatment of this class of cases. The object of the following chapters is to attempt to throw some light upon the physiology and pathology of uterine motions and displacements, with a view to the establishment of correct general principles of treatment."

Now it is a little curious, that about ten or twelve years ago, when the attention of the profession was directed to the subject, almost every second or third woman in Modern Athens was discovered to have more or less displacement of the uterus, requiring the use of a bougie or some uterine instrument to keep the organ in its place. The disease became epidemic, and banished all other affections for the time. The cases became so numerous, that some were so wicked as to assert that the uterine bougie and other instruments intended to relieve the symptoms, really produced the disease which they were meant to remove; but, of course, this could not be. It is certain, however, that whenever a woman complained of some nervous hysterical symptoms—some irregularity in the menstrual discharge—some unusual feelings and symptoms for which there could be found no satisfactory cause—the uterus was examined, and a little displacement, to the right or to the left, backwards or forwards, was found to be present, and at once set down as sufficient to account for all the symptoms.

That the uterus may be displaced, when enlarged to a certain degree by pregnancy or by disease, so as to produce serious symptoms by encroaching upon the neighbouring organs, in addition to those arising from the diseased state itself, cannot be doubted. But that the small virgin uterus is frequently out of its normal position, so as to occasion any serious disturbance to the system, is not very likely. Indeed, suppose such an organ to be very greatly displaced in a well-formed pelvis, we much doubt if it would at all necessarily interfere with good health. We are in-

clined to believe, therefore, that the great proportion of cases of malposition, if not the whole of them, which are related as having been met with in the dead body by morbid anatomists, have occurred in women who have borne children, and in whom the uterus has been more or less enlarged from some morbid cause. The symptoms, then, which have too often been attributed to the malposition, we believe, with Dr. Duncan, to be owing to the morbid state of the organ itself, as metritis, uterine catarrh, and various species of leucorrhœa.

In the article before us, Dr. Duncan quotes many authors in support of these views. Thus, Dr. Bennet says—

"It is the inflammatory disease that requires to be treated. If the contrary opinion (he adds) prevails now with some practitioners, it is because they are under the influence of erroneous theoretical opinions. Overlooking the real disease, they merely treat the imaginary one, and thus do more harm than good. . . . What proves retroversion of the uterus to be merely an epiphenomenon in the class of cases to which I am now alluding—those in which it is accompanied by some inflammatory condition—is, that when the latter is thoroughly cured, all morbid symptoms disappear, without any therapeutic means having been directed to the retroversion; and that, in very many cases, the uterus gradually resumes, partly or entirely, its natural position. But, even if it does not, the circumstance is of little or no consequence."

With regard to those instruments at one time so much used by a few practitioners, and which, it is now well known, have often produced great mischief, Dr. Duncan says—

"The use of intra-uterine pessaries has been so highly recommended, in the treatment of the anterior and posterior displacements, by Drs. Simpson, Valleix, Rigby, Protheroe, Smith, and others, that it demands the most careful consideration. Abundant experience shows that these instruments may be worn for long periods, in many cases, without compromising the safety, or even the general health of the patient. But it is another question to decide whether their use is followed by cure. Some of these authors maintain, with Dr. Simpson, that the uterine congestion and hypertrophy which coexist with the displacement are most frequently the result of the malposition, and require for their successful treatment that the malposition be first of all rectified. Others, with M. Valleix, holding the same views, believe that the uterine engorgement and hypertrophy may be diminished by the use of the instruments—a doctrine which, I am convinced, on theoretical and practical grounds, to be wrong. M. Valleix's own experience, indeed, goes far to confirm this."

And again—

"My own experience as to the curative effects of these instruments has not been favourable to their use. In many cases, especially those characterised by vaginal relaxation, the displacement has returned as soon as the instrument was removed. A case of this kind was lately under my care, where, for very aggravated symptoms of chronic uterine irritation, with retroversion and extreme vaginal relaxation or paralysis, the intra-uterine pessary was tried on several occasions. During its use none of the symptoms were relieved, but the reverse."

In the other article by Dr. Duncan, "On the Statics of Pregnancy," he considers and explains minutely—1. The Position of the Uterus; 2. The Position of the Fœtus in Utero; and 3. The Position of the Pregnant Female.

These subjects are described at length, and illustrated by a number of drawings and diagrams of the female figure, at the middle and the end of pregnancy, as also of the position of the foetus in utero. We must refer those who are interested in these points to the article itself, as no extracts could be well understood without an examination of the figures.

MEDICAL INTELLIGENCE.

1. *Quarterly Report of the State of Disease in the Glasgow Royal Infirmary.*—During the past quarter, extending from 20th March to 20th June, the total number of patients admitted was 894, the total dismissed was 935, and the total deaths were 96; of these 690 were admitted to the medical and surgical wards, and 204 to the fever wards. The dismissals from the former were 736, and from the latter 199. The deaths in the one were 65, and in the other 31. The number of accident cases amounted to 158. The average number of fever cases in the house has continued small, ranging between 40 and 60. The number of small-pox cases has been comparatively high, averaging from 16 to 24. Last year the greatest number of small-pox cases occurred during the summer months, this year they began to increase at a somewhat earlier period of the year; of the 65 fatal cases which occurred in the medical and surgical wards, more than three-fourths occurred in the medical wards. The great comparative mortality in this department of the house was mentioned in last report, and was accounted for by the numerous cases of phthisis, dropsies, &c., in an advanced stage, which were admitted. The same cause continues to produce a like result. The surgical wards have continued in a remarkably healthy state, and it is trusted that a vigorous prosecution of the measures adopted will keep them in the same good sanitary condition.

We will give a brief resumé of the principal operations:—

I. *AMPUTATIONS OF THE LOWER EXTREMITY.*—1. *Of the Thigh.*—J. W., aged 16, disease of the knee-joint, of two years' duration, was admitted on the 16th March. Amputation was performed in lower third of the thigh, and though not yet dismissed, is recovered.

J. M'O., aged 30, admitted on 3d May, with disease of the femur (ostitis of six weeks' standing), had amputation performed on the 1st June. He was much debilitated previous to the operation, and the chances of recovery were small. He died on the 4th June.

J. B., aged 47, was admitted on the 2nd June, with compound fracture of the lower end of the femur. The condyles were separated from the shaft and from one another, and synovia escaped abundantly from the wound. He at first refused to have the leg removed, but on the following day gave his consent. The limb was removed in the lower third. At first he seemed to do well, but having a constitution debilitated by intemperance, he gradually sank, and died on the 7th.

M. M., aged 9, was admitted with diseased knee-joint and atrophy of the leg of 5 years' duration. The leg was removed above the knee, but symptoms of phlebitis rapidly supervened, which terminated in a fatal issue.

2. *Of the Leg.*—M. B., aged 20, who has been frequently a patient here, and for lengthened periods, on account of extensive loss of integument of the lower part of the leg. Various measures, and, among others, taliacotian operations had been tried to supply the lost parts, but without success; it was, therefore, determined to amputate the leg. This was accordingly done, high up near the joint, and the further progress of the case has been quite successful.

C. C., aged 32, was admitted with strumous disease of the ankle-joint, of two

years' standing. The leg was removed in the lower third, and she recovered favourably.

II. AMPUTATIONS OF THE UPPER EXTREMITY.—*Of the Arm.*—A. S. aged 6, was admitted with extensive fracture and laceration of the arm; amputation was performed in the upper third of the humerus, and the patient made an excellent recovery.

III. LITHOTOMY.—One case.

There has been one case of a child about 3 years old, who had a small mulberry calculus removed. He is likely to do well. This case came from Coatbridge. We mentioned in last report that Kilmarnock was a district prolific in this class of cases. The same may be said with truth of Coatbridge.

IV. HERNIOTOMY.—There was one case which proved fatal.

J. H., aged 50, was admitted with what was supposed to be some obstruction of the bowels, not depending on hernia. On admission, a small tumour was felt in the groin, which was diagnosed to be a femoral hernia; ten days had elapsed since the symptoms had manifested themselves. Nothing had been done; purgatives had been administered; on cutting down on the tumour, the diagnosis was found to be correct. The bowel was returned; unfavourable symptoms soon manifested themselves, and the patient died five days after the operation.

V. EXTRACTION OF BULLETS.—Two cases successful.

P. R., aged 35, was admitted with a bullet lodged in the mastoid process of the temporal bone. He received the wound in the Carlist war, while serving with the British Legion. The bullet had remained in its present position for twenty years, and caused much irritation. It was determined to extract it. The removal was attended with success.

P. M'V., aged 36, admitted on 25th April, was a soldier of the 50th Regiment, who was severely and almost fatally wounded at the battle of Inkermann. On the left side of his neck the presence of a bullet was distinctly felt, and the cicatrix on the right side of the neck, by which the bullet had entered, was easily discovered. The parts were quite healed up. In its passage, the missile had seriously injured the spine, as he was paralysed instantly at the time of the injury, and is still considerably paralysed on the right side. An incision was made directly over the bullet, which was found to be very firmly embedded in the muscles, but its removal presented no special difficulty. The parts soon healed up. It is somewhat singular, that this simple operation was not performed for him at Scutari, or in the military hospitals at home, in which he had been resident. It certainly cannot be considered good for any one to carry about in his body a piece of Russian or Spanish lead when its extraction is simple and easy.

V. EXCISIONS OF JOINTS.—1. *Of Knee-Joint.*—There was one case of this kind which is doing well.

E. T., aged 12, was admitted on the 3d July, with strumous disease of the knee-joint. It was considered to be a favourable case for resection of the joint. This operation was accordingly performed on the 26th May. Her recovery is proceeding most favourably.

2. *Of Elbow-Joint.*—A. G., aged 19, was admitted with extensive disease of the elbow-joint. Excision of the joint was determined on, and performed. The parts were found much displaced by disease, which rendered the operation somewhat more difficult than usual. He made a rapid recovery.

3. *Of Bones.*—*Of Os Calcis.*—J. H., aged 43, was admitted with necrosis of the os calcis. The dead bone was removed, and the patient is likely to recover.

4. *Of Tumours.*—*Of Mamma.*—E. P., aged 36, admitted on the 10th April, with a tumour in the right mamma, and there being nothing in her condition to contra-indicate the operation, it was removed on the 17th, and she was dismissed well on the 28th.

M. R., aged 56, was admitted with scirrhus of the mamma, which had existed for two years. The diseased part was removed, and the patient recovered.

5. *Of Tumours of the Jaw.*—J. B., aged 37, admitted with a fungous tumour of the jaw. Its attachments not being deep, or implicating much of the bone, its removal was easily effected, and recovery took place.

P. S., aged 40, was admitted with a fungous tumour, implicating the inferior maxilla. Excision of part of the maxilla was necessary, and the patient is doing well.

VI. PERINEAL SECTION.—There were two cases of this kind.

J. K., aged 28, was admitted with stricture of the urethra and fistula. Perineal section was performed: he is recovering.

A. M'J. was admitted with stricture and urinary fistula. The stricture and fistula were laid open, but the operation is too recent to allow a judgment to be formed as to the result.

The case of excision of the ankle-joint mentioned in last report, has been dismissed. Though the wound was not quite closed up, the operation may be considered to have been quite successful.

The case of excision of the whole of the tibia has not yet been dismissed. The patient's health is good, but it may still be considered doubtful whether he will have a good and serviceable leg.

2. *Glasgow Medico-Chirurgical Society, April 10, 1855.*—The second meeting of the session was held this evening.—Dr. Wilson in the chair.—Dr. A. D. Anderson was elected a councillor in room of the late Dr. Robert M'Gregor. The secretary intimated that some of the country members had represented to the council, that the lateness of the present hour of meeting prevents their attendance, except under the inconvenience of passing the night in town. To ascertain the sense of the society upon this point, one of the secretaries, by instruction of the council, gave notice of motion—"That it is expedient to adopt an earlier hour than the present for the meetings of the society."

Dr. Allen Thomson concluded the learned paper on the production and transmission of entozoa, of which he had submitted a portion to the meeting in March.—(See p. 178 of the present number.) On the motion of the president, the thanks of the society were unanimously tendered to him for his able communication.

May 8th, 1855.—Dr. Wilson in the chair.—The society resolved that in future the hour of meeting should be seven in place of eight o'clock.

Dr. Morton related a case of congenital malformation, in which there was a deficiency of the lower jaw, and an apparent attempt at the formation of an additional ear.—(See p. 167 of the present number.)

Dr. Weir read a paper on spontaneous gangrene.—(See p. 201 of the present number.)

Dr. James Paterson would suggest, that in most cases of spontaneous gangrene, and that in all of the three cases now detailed, the sole or principal causes of the disease were, primarily, a vitiated state of the blood, and, secondarily, a debilitated condition of the solids. The formation of the clot was the more immediate cause of the mortification; but the tendency of the blood to coagulate in the vessels, was merely one mark of that depraved condition of the fluid which had entailed the lowered vital standard. The first case detailed, he considered, would bear out this explanation. In it there was found a fibrinous clot in the left cavity of the heart, without any marks of inflammation of the lining membrane; and if this could take place in the heart, the same might occur in the arteries, without the necessity of arteritis being present. In the whole of the cases there had been debilitating agencies in operation. The redness of the lining membrane of the arteries could hardly be adduced as evidence of inflammation, since Dr. Weir had himself referred to the same condition of the vessels in typhus fever, scurvy, &c., notoriously diseases of debility. The coagula in the vessels did not, as described, appear to him (Dr. Paterson) to resemble the effusions resulting from inflammatory action. Spontaneous gangrene might, however, be entirely of a local character, and in such cases the cause must be sought for independently of any particular state of the general system.

Mr. Reid said that he had not met with any cases of spontaneous gangrene in subjects so young as those detailed by the essayist. He recollected of three cases of elderly persons affected with this disease, all of whom complained very

much of severe pain in the feet before the mortification came on. He was inclined to look upon all cases of this affection, either in old or young, as depending upon an inflammatory state—upon arteritis. All the symptoms appeared to indicate this. The vessels which appear on the surface of the limb in this affection, are strictly indicative of inflammatory action, and these, taken along with the *post mortem* appearances, prove that it arises from arteritis. He could not agree with the views of the last speaker as to a diseased state of the blood. He believed that the clot found in the vessels after death arose from effusion of lymph, arising from increased action of the *vaso vasorum*. Similar effects took place in all inflammatory diseases—pneumonia, pleuritis, &c. With regard to the treatment of this affection, he believed that stimulants of all kinds were decidedly hurtful, although this practice has been long the favourite one. The antiphlogistic treatment was the best. Even blood-letting would be found very generally useful, and in place of oil or spirit of turpentine, camphor, &c., so commonly applied to limbs in a state of gangrene, a soft warm poultice was greatly superior.

Dr. Morton objected to the term *spontaneous* gangrene, and agreed with the first speaker, that in such cases there is a poisonous principle in the blood, which acts as the cause of the mortification. This may be induced by insufficient diet or innutritious food, or food of a bad or poisonous quality. One circumstance in proof of this is the fact, that mortification of the extremities has been produced in large numbers of persons from living upon rye in a diseased state—in the state called ergot of rye. He did not believe in the notion, that arteritis was the cause of this affection. When it was present, it was more likely to be an effect. However, he had not had much practical experience in regard to this disease.

Dr. Wilson said that he considered the term *spontaneous* gangrene a very proper and appropriate appellation, the mortification arising, not from an accident, but from some internal cause. He was at present attending a gentleman* under this complaint. Three years ago he had been attacked with complete and general paralysis. He lost the power of speech, of hearing, and of all his mental faculties, as well as the power of motion. He recovered, however, from this state in a great measure, and about two years ago the toes of one foot became gangrenous, which gradually spread upwards. A line of separation in due time formed, and the limb was removed immediately below the knee. The disease, however, has now appeared in the other lower extremity, and is proceeding in the same way as it did in the first. The stump also has become affected, and he is now, to all appearance, dying. This he considered a distinct case of *spontaneous* gangrene. Dr. Wilson proceeded to say that he had lately seen another more remarkable case of dry gangrene of the uterus. The patient, it was supposed, had passed her term of utero-gestation by about two months. On vaginal examination he could discover no os uteri. It appeared to be high up towards the pubis, and not within reach of the fingers. He was informed that, at the time she expected to be confined, labour pains had come on, continued for a day or two, and then ceased. They were, however, very trifling, not at all severe, and, having gone completely off, doubts began to be entertained of her being pregnant. Three months afterwards she died, without anything being done for her. The anterior aspect of the uterus was found, on *post mortem* inspection, quite black, dry, and gangrenous. The upper part, where the placenta was attached, was moist and apparently healthy in structure. A large well-formed female child was found within the uterus, presenting with the breech, and had no appearance whatever of gangrene or any other disease. This woman was delivered of a child about twenty-one years ago, without having had any children or abortion in the intervening period.

Dr. Weir made a few remarks in reply, and the society adjourned.

13th June, 1855.—The society met at seven o'clock, and it was probably owing somewhat to the change in the hour of meeting, that there was so small an attendance of members.

* Since dead.

Dr. Anderson, in the absence of the president, occupied the chair.—Dr. Aitken, of the Pathological Commission in the East; Dr. Cowan, *en route* to an hospital appointment in Turkey; Dr. Geo. M'Leod, surgeon at the Civil Hospital at Smyrna; and Dr. A. A. M'Dowal, staff-surgeon in the Turkish Contingent, were admitted corresponding members of the society. At the same time, Mr. Wm. Willson, Kirkintilloch, was elected an ordinary member.

The chief business of the evening, the receiving from Dr. Lawrie an account of two interesting cases of deep-seated tumours in the neck, was in a measure lost from the paucity of members present; but we hope to be able to publish the paper in our next number. The remarks which followed the reading of the cases were confined chiefly to a criticism of the procedure of tying the carotid artery and jugular vein on account of alarming hæmorrhage in one of the cases.

Dr. John M'Ewan, jun., next gave an account of "an interesting case of Asiatic cholera," the chief peculiarity in which was the continued absence during eight days of the urinary secretion. This, in a case in which recovery took place, Dr. M'Ewan considered very singular, and he could find no parallel to it either in ancient or modern times. It was this peculiarity that induced him to bring it before the society.

Dr. Lawrie said he was much inclined to believe that something had been omitted in the history of this case. The urine might have flowed away insensibly, and not be observed by the attendants. This was not at all unlikely to occur in a disease where the discharges are so abundant. He had some little doubt, therefore, as to the correct details in this case. Although, however, complete suppression of urine was an unfavourable symptom in cholera, particularly when it continued many days, as in Dr. M'Ewan's case, he did not think that when this ceased, and the urine began to flow freely, the patient was necessarily saved. No doubt, it was a good sign; but cases where this took place, often proved fatal notwithstanding.

Dr. Morton was strongly inclined to coincide with Dr. Lawrie in the opinion that something had been omitted in the details of this case—that some mistake had occurred. It was not very likely that a man would live eight days without secreting a drop of urine.

Dr. Weir adverted to the very remarkable circumstance in the case—certainly the most remarkable—that while no urine was passed for so many days, there was no mention made of any head symptoms being present. The patient had no stupor or coma, nor even any particular drowsiness, symptoms which are well known to occur in all cases where the urinary elements are retained in the system. Neither did it appear that there was any other discharge or excretion which would compensate for the want of the urine. In all instances on record of complete suppression of urine, there existed some vicarious discharge from the skin or the bowels, or some other excretory organ, by which those elements usually discharged by the urine were thrown out from the body. The retention of these, even for a very short time, all physiologists admitted was incompatible with life. They must be excreted in some way or other, otherwise death would very soon take place, preceded by symptoms indicating oppression on the brain. The most extraordinary case of suppression of urine on record is one related in the Philosophical Transactions, where a young man lived to the age of 17 years, without ever having passed any urine. But he had a constitutional diarrhoea—a continual aqueous flux, by which the urea usually excreted by the kidneys was discharged from the system. In Dr. M'Ewan's case there appears to have been nothing of this kind, so that it was certainly most remarkable that the man should have lived eight days.

Dr. Steven and another member made a few remarks, agreeing with the previous speakers.

Dr. M'Ewan, in reply, stated that he had forgot to mention that on the fifth day of the suppression there was a distinct urinous smell in the perspiration, which might perhaps go a certain way in explaining the fact of life being preserved so long, without any natural discharge from the kidney. He farther remarked, in relation to cholera, that although the return of the urinary secretion

was not always followed by recovery, yet it has been generally found that a copious discharge of urine usually preceded the disappearance of the choleraic symptoms.—The society then adjourned.

3. *Report of the Glasgow Royal Asylum for Lunatics, for 1854.—Admissions.* The total number of patients admitted amounts to 240; and, as has generally been the case in this asylum, the number of males exceeds that of the females, there being 123 of the former, and 117 of the latter. The relative proportion of male to female patients, calculated from the total number of admissions (6,827) since the opening of the asylum, is as 119·3 of the former, to 100 of the latter—or very nearly as 6 to 5. This preponderance of male patients has been so very generally observed in our past history, and is so decided, that it must depend on other than mere accidental causes. Of those admitted, 107 were affected with Mania, 83 with Monomania, including Melancholia, and 50 suffered from Dementia. I have already, in my former reports, defined these terms, and stated the sense in which I employ them. In the class of cases constituting the first group, recoveries, for various reasons, most frequently take place. The disease is more amenable to treatment than the other forms; and it is in such cases that remedial aid must be and is soonest sought. Many recoveries also take place in those cases forming the second group. In this class, the disease is, for the most part, gradual in its approach, slow and insidious in its progress, and in very many instances is associated either with visceral complications, or a generally enfeebled state of the nervous system. In the third group, recovery occurs less frequently. The mental infirmity characteristic of this class of cases may be the result of original mal-development, or the consequence of cerebral disease or injury of the brain; it is often associated with such diseases as epilepsy and paralysis, and is frequently coincident with the advance of old age.

A question has been raised as to the safety and propriety of admitting patients usually denominated "criminal lunatics" into a public lunatic asylum, and various objections have been urged condemnatory of the practice. It is therefore likely, and the rather that this subject has been taken up by competent authority, that state hospitals in England and Scotland will be provided by the Government, similar to the one in Ireland, exclusively for this class of patients. Three patients under this head were admitted; one of them, a male, got up during the night, and seizing a knife ran out of the house with it, and stabbed the first person whom he chanced to meet upon the road. Another patient, a female, while under the care of her friends, contrived to get possession of a knife, and with it stabbed her husband. The act in both instances was the same, only the circumstances differed. The one was under no surveillance and stabbed a stranger, the law interfered, the man was apprehended, proved to be insane, and committed—a criminal lunatic. The other patient, though watched and tended, stabbed her husband, the relatives kept the matter quiet, and she was committed to the asylum as an ordinary patient.

The designation "criminal lunatic" for such cases ought to be discarded; it is a misnomer, and its employment tends unfortunately to degrade the unhappy being to whom it may chance to be applied. Some such designation, however, might answer convicts, and be applied to those who had become insane after having been convicted of crime; and this class should certainly be kept by themselves. Speaking philosophically, no lunatic can be a criminal if he committed the deed when insane. Either the individual, at the time when the act—whatever it may have been—was committed, was sane or he was insane; in the one case he is a criminal and no lunatic, in the other he is a lunatic and no criminal. He cannot be both, any more than he can be both sane and insane at the same moment; and it is as unjust that the sense of degradation, associated with criminality, should be attached to any one whose acts are the results of an insane mind, as it would be unjust to punish such a one for his deeds. The second of the admissions of this class is not uninteresting. In a fit of jealousy the patient committed an assault of a serious nature, and was sentenced to an imprisonment of twelve months. It does not appear, that at the time of her trial

any doubts were entertained of her sanity, though soon after unmistakable insanity developed itself. Although quite a young woman—under twenty-five years of age—she had been committed to prison forty-two times on various charges; and though no positive or certain information of the fact can be obtained, there is good reason to believe, that at least some of these alleged crimes were in reality the overt acts of insanity. It would be curious to know when in reality mental disease began here.

In six cases, all males, it was ascertained that the head of the patient had been injured, and that this was the apparent cause of the mental disorder. They were all imbecile, and in three paralysis was superadded. In two the injury had been sustained in early life; in the others the accident had occurred from a few weeks to several years prior to admission. In not one of these cases does recovery seem probable.

Dismissions.—During the past year, 288 patients have been discharged; of these 116 were dismissed cured, many of whom we were surprised to see become well, their cases having appeared so hopeless on admission; 110 were removed during treatment or relieved; and 62 died.

Deaths.—62 patients have died during the year, of whom 32 were males and 30 females. Although, in the present instance, the mortality of the two sexes is nearly equal, the past experience of the Institution proves that the mortality is considerably higher among the male than among the female patients.

In consequence of the favourable reports of the beneficial results which had been obtained from the use of sumbul in cases of epilepsy, I was induced to make trial of this alleged new remedy for that disease. Several patients of both sexes, whose cases seemed the most favourable for trial, were selected, and submitted to this mode of treatment; but, I regret to say, with only doubtful, if indeed with any good result. It seemed as if, in some instances, the seizures occurred less frequently; but if the interval was prolonged, the attack, when it did come on, was apparently of increased severity. It may, however, reasonably be doubted whether either one or other of these results was produced by the sumbul, for those who are conversant with epilepsy as it usually occurs among the inmates of an asylum, know well that even under ordinary circumstances the interval between the paroxysms is of very variable duration, and that the attack often varies greatly in intensity.

Several patients of the higher classes have been permitted, during the summer, to go to the coast, to the Bridge-of-Allan, Dunkeld, Ireland, &c. for amusement and pleasure, always accompanied, of course, by attendants. A few are proposing to go to the Exhibition in Paris, and probably this also may be permitted.

The printing-press of the asylum continues to be used by the patients. They compose the articles, then put them in type, and then act as pressmen in throwing them off. A great many schedules, &c. have been printed, also part of Shakspeare, with original introductory notes. A gentleman—a profound melancholic, with very extraordinary delusions—continued for a time absorbed in the contemplation of his own miseries, moody and inactive. Nothing could interest him, and if his thoughts were for a moment diverted, they immediately reverted to their former channel. He was a genius—an artist; and had on a former occasion been insane, and then his recovery dated from the time when he began to employ himself in executing some sculptures in marble, which he did most beautifully and truly. On this occasion, it was resolved to engage him, if possible, in a similar manner, in the hope, if we succeeded, that the experiment might be followed by a like happy result. Marble and the necessary implements having been procured, he was at length induced to set to work, and before he left the asylum, he had executed several sculptures in a very superior manner; and I am glad to say that he has since continued well.

4. *Death of Dr. John Couper.*—We regret to announce that Dr. Couper, Regius Professor of Materia Medica in the University of Glasgow, died on 11th May, 1856. He had practised medicine in Glasgow for nearly forty years, and was

universally esteemed by his professional brethren and private friends, as a man of worth and integrity, and a sound practical physician.

5. *Chair of Materia Medica*.—Dr. John Easton has been appointed by the Crown to the Chair of *Materia Medica* in the University of Glasgow, vacant by the death of Dr. John Couper. Dr. Easton has lectured on the same subject in Anderson's University for the last fourteen years, with very great success.

BOOKS RECEIVED.

- Report by the President's Council of the Royal College of Surgeons of Edinburgh, 9th March, 1855, upon a document entitled "Draft Bill for Regulating and Improving the Medical Profession." Presented on 12th March. Amended and adopted by the College, 31st March, 1855.
- On the Employment of Water in Surgery. By Alphonse Auguste Amusat of Paris. Translated from the French, by Frank H. Hamilton, Professor of Surgery in the University of Buffalo. Jewett, Thomas, & Co., Buffalo, 1855.
- Vegetable Malaria, one of the Exciting Causes of Asiatic Cholera. By Frank Hastings Hamilton, M.D. Jewett, Thomas, & Co., Buffalo. 1852.
- Fracture Tables. By Frank H. Hamilton, A.M., M.D. Jewett, Thomas, & Co., Buffalo. 1853.
- Elkoplasy or Anaplasty, applied to the Treatment of Old Ulcers. By Frank H. Hamilton, A.M., M.D. New York: Holman, Gray, & Co. 1854.
- Address to the Graduates in Medicine at the University of Buffalo, April 27, 1853. By Frank H. Hamilton, A.M., M.D. Jewett, Thomas, & Co. 1853.
- Observations on the Life, Disease, and Death of John Hunter, in Elucidation of the Nature and Treatment of Gout and Angina Pectoris, being the Oration delivered before the Hunterian Society at its 36th Anniversary. By Joseph Ridge, M.D. London: J. Churchill. 1855.
- The Reorganization of the Medical Department of the Army. A Letter to the Right Honourable Lord Panmure, Minister of War. By Philo-Medicus. London: James Ridgway. 1855. (A well-written pamphlet, by an author accurately acquainted with his subject.)
- The Indian Annals of Medical Science. No. IV., April, 1855. R. C. Lepage, & Co., Calcutta and London.
- The Edinburgh Medical and Surgical Journal, April, 1855. (In Exchange.)
- Monthly Journal of Medical Science (Edinburgh), April, May, June, 1855. (In Exchange.)
- The Dublin Quarterly Journal of Medical Science, May, 1855. (In Exchange.)
- The Journal of Psychological Medicine, April, 1855. (In Exchange.)
- The Medical Examiner (Philadelphia), March and April, 1855. (In Exchange.)
- New York Journal of Medicine, March and May, 1855. (In Exchange.)
- Nashville Journal of Med. and Surgery, April, May, and June, 1855. (In Exch.)
- The Medical Chronicle, or Montreal Monthly Journal, March, 1855. (In Exch.)
- The Dublin Hospital Gazette. (In Exchange.)
- The Association Medical Journal. (In Exchange.)
- Quarterly Journal of Public Health, and Record of Epidemics and Hygiene, March, 1855. (In Exchange.)
- The Seventeenth Annual Report of the Directors of the County and City of Perth Infirmary. Perth, 1854.
- Forty-first Annual Report of the Directors of the Glasgow Royal Asylum for Lunatics. Glasgow, 1855.
- Forty-ninth Annual Report of the Glasgow Lock Hospital for the year 1854.
- The Annual Report of the Old Man's Friend Society. Glasgow, 1855.
- Second Annual Report of the Western Public Dispensary. Glasgow, 1855.
- Fifteenth Annual Report of the Crichton Royal Institution for Lunatics, Dumfries. November, 1854. (A very able report, which will probably be noticed in our next number.)

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ORIGINAL COMMUNICATIONS.

I. *The Medical Institutions of Paris.* By WILLIAM HALE HINGSTON, M.D., L.R.C.S.E., &c., &c.

(Continued from Vol. II., P. 154.)

L'HOPITAL DE LA CHARITE ranks alongside the Hôtel Dieu in clinical importance, as well from the number of patients there cared for, as the high reputation of the attached staff. The hospital contains about 500 beds. The wards are large—far too large—many of them containing upwards of 90 beds, but they are labelled off into different *salles*, each of which is visited by a different medical attendant. *Andral, Cruveilhier, Rayer, Bouillaud, Piorry, Velpeau*, form the principal portion of the staff. The clinics of Piorry and Velpeau are the most numerous attended. Piorry seems to possess internal evidence of the *bruit* he has made in the world; and while he inwardly congratulates himself on the distinguished position he has attained, he seems highly to approve of the public choice in having conferred honours and distinctions upon one so deserving of them. "*Messieurs; Si vous suiverez mes lectures régulièrement, je vous donnerai un certificat, et un certificat DE MOI vaut plus qu'un diplôme,*" is an extract from one of his bedside *conversations*. The hammer and pleximeter, as all the world knows, are invariably had recourse to, to resolve all difficulties. On first observing the very great perfection to which he has brought the art of percussing—or rather the perfection to which he says he has brought it—we are inclined to believe that *charlatonerie* has done much for M. Piorry. He maps out, as a geographer would a country, concentric or eccentric hypertrophy of the heart, hydro-pericardium, &c.; defines the extent of dulness in pulmonary apoplexy, even the various shades of dulness; while those who listen to the sounds elicited must admit, either that their perception of the modifications and varieties of sound are very obtuse, or that Piorry is a charlatan of the first water. Impartial observers, even while they admire his very great acuteness of

the sense of touch, that *tactus eruditus*, which in him is really extraordinary, and which foretels what post-mortem appearances generally confirm, cannot fail to perceive how strongly he is tinctured with preconceived notions. When he gives an opinion, and that, too, with ostentation and self-laudation, ill becoming a star in the firmament of medicine, the students whisper, in whispers quite audible—" *Il est, vraiment, un homme extraordinaire !*" The intended compliment is not lost on Monsieur Piorry, who proceeds, with his admirers, on their tour of discovery. Piorry possesses great confidence in iodine in tubercular affections. Iodine by the mouth in solution, by the lungs in inhalation—enemata per rectum—iodine baths, and ointment by the skin—indeed one might suppose that sufficient was introduced to cure the tubercles "by displacement!"

We meet with a contrast to Piorry in his colleague Bouillaud. The latter thinks, that notwithstanding his strenuous efforts in the cause of science, the world is unmindful of him and also of them; and often does he complain of that portion of the medical public who regard, with a more favourable eye, the labours of his more fortunate, though less deserving, confrères—*J'écris des livres et on les lit pas*," he is oft heard to exclaim; which in plain English would amount to, "I waste my sweetness on the desert air." Speaking seriously, however, I have rarely seen a physician more correct in diagnosis. He was the first, I believe, to point out the frequency with which articular rheumatism is accompanied by endocarditis. In the latter affection, as well as in pericarditis, he still adheres to the severe antiphlogistic treatment.

Velpeau takes by surprise those who are familiar with his works. A quiet, little, grey-haired old man, who still attends as regularly to his duties as if he had his reputation yet to earn. He speaks in an easy familiar manner, seems to be a favourite, and, in walking through the wards, is encircled by quiet and attentive students—*rara aves* in the wards of a Parisian hospital.

Cruveilhier and Andral, the most generally known, probably, are not so much sought after as are those of more limited reputation. Andral dilates but rarely on cases under treatment (at least, such was the case when I was there), and Cruveilhier is frequently absent from indisposition and the press of other engagements.

HOPITAL DE LA FACULTE.—Here we meet with the very essence of what is interesting, in surgery especially. The cases are by no means numerous (not over 850 receiving surgical assistance during the year), but are well selected. In the obstetric department, about 2000 births take place annually, and it is under the care of Dubois. The surgical department is under the charge of M. Nelaton. Nelaton's surgical clinic is the most numerous attended in Paris. He lectures in an easy manner, without hesitation, yet seemingly without attaching much importance to

oratorical display. He possesses wonderful acuteness of perception and faculty for observation; bold and energetic, yet, at the same time, cautious. To him is assigned by the profession, students, &c., the first rank in surgery, and wisely, too, I think; for Nelaton, in my opinion, is the very beau-ideal of a surgeon. The mortality at this hospital is 1 in 16·8 in surgery, and 1 in 23·0 in midwifery.

HOPITAL DE LA PITIE.—Formerly, a reception-house for poor children and foundlings; now, an hospital of the first class. It is a well-constructed building, divided into a number of houses, which are separated from each other by courts and avenues. The hospital contains 624 beds. Nearly 12,000 receive professional assistance during the year, the mortality among which, in medicine, is 1 in 14·78, and 1 in 27·97 in surgery. Saugier occupies the official chair in surgery. Michon has a surgical clinic, and few surgeons are more practical. Gendrin devotes most of his attention to diseases of the heart, and Valleix to those of the uterus and nerves.

HOPITAL DU MIDI.—The theatre of M. Ricord's operations—his bursts of eloquence—his sallies of wit—his displays of sarcasm. Here he experiments and argues, and laughs and jokes; and here Vidal frets and snarls—Ricord alone, Vidal with Velpeau, Malgaigne, and a host of others; for, as syphilographers well know, M. Ricord looks upon the virus of syphilis as specific and distinct in its origin and course—as communicable only by a chancre; Malgaigne, Velpeau, Vidal de Cassis ascribe to matter not essentially syphilitic effects similar to those dependent on syphilitic infection. In other words, the whole of the profession of Paris maintain the transmissibility of the secondary accidents, and the opposite side of the question has but one defender—M. Ricord. Violent has been the wrath poured out on Ricord's devoted head. Malgaigne, the *Cicero des hopitaux*, the "friend of twenty years' standing," argued against him, which nothing but a desire for the elicitation of truth could have induced him to do; but Ricord, nothing daunted by his friend's defection, returns to the charge, and the blows he is unable successfully to parry he dodges. Their discourses are published in the *Bulletin de l'Academie de Medicine* for October, 1852, *et seq.*, and might be read with equal profit by *syphilographes*, and barristers, and stump orators in embryo. In chancre, the ectrotic or abortive treatment is resorted to by M. Ricord to destroy the nucleus of infection. He considers nitrate of silver too superficial in its action, and prefers Vienna paste, or strong nitric acid, which destroys the healthy tissue beyond the ulcerated parts. He gives mercury when the poison has entered the system, and iodide of potassium in the tertiary form. Sometimes, in complicated cases, these two medicines are exhibited conjointly. Ricord is possessed of wonderful volubility of speech. His class and visiting hours are looked forward to by the students

as something to be enjoyed. In summer, he holds forth beneath a tree in the green in rear of the hospital, where listeners can seat themselves *à son aise*. He is very witty, constantly indulges in jokes and *double entendres*, occasionally too rough, however, for "ears polite."

When this hospital was founded, in 1613, one bed served for eight patients, four of whom occupied it from 8 p.m. to 1 a.m., and the remainder from 1 to 7 a.m. With their ticket of admission they received a flogging, were thrust into a dark close cellar, forced to wait months before being placed under treatment, and, finally, by way of a *souvenir* of the place, received another severe castigation on leaving. At that time, the married and single of both sexes occupied the same room.

HOPITAL BEAUJON.—An unassuming, and, at the same time, one of the most comfortable hospitals in Paris, containing 438 beds. The air is as pure within as without this hospital, rendered so by an apparatus which introduces fresh, and removes tainted air. By a like contrivance, cool air is forced in in summer, and warm in winter. It is situate in the Faubourgh St. Honore.

HOPITAL NECKER.—This hospital is rendered famous by the presence of one man—Civiale, the lithotritist. In his presence, one might almost fancy he were breathing the air of Britain, and listening to the remarks of a Stokes, Syme, or Alison. There is a total absence of that boasting which we have so much room for censuring in the higher ranks of the profession in Paris. Relative to his manner of seizing the stone, it is impossible to speak. It is done with the greatest dexterity, and seemingly with ease; it is crushed, and the larger fragments again broken. The operation is frequently attended with very severe pain, and is only admissible when the stone is under a certain size and friable, and when there is but little irritation of the bladder. I observed him, on two occasions, to reject patients who had, with stone, irritable bladders, as unfit subjects for lithotrity.

HOPITAL LOURCINE.—An hospital for female syphilitic patients. The surgeon to the institution is M. Cullerier. He is a strong advocate of nitrate of silver in vaginitis, vulvitis, and also in the early stage of urethritis. After canterization in vaginitis, the sides are prevented from approximating by pieces of lint. Extended observations are not easy, as it is difficult to obtain admittance to this hospital for any length of time.

HOPITAL COCHIN.—Much frequented, especially by strangers, who seem to have a partiality for Maisonneuve. He treats them to an occasional *spectacle* in his treatment of stricture of the urethra, by the *coup sur coup* method of dilatation—a method which, having frequently witnessed it at the Cochin and elsewhere, I cannot sufficiently denounce; for, judging from the cries of those operated upon, amputation of the penis must be quite a luxury in comparison, and one likely to result in about as much

good. About 5000 patients are admitted into this hospital during the year.

HOPITAL ST. MARGUERITE.—A very well-constructed building, in a cheerful part of the city (Rue du Faubourg St. Antoine). Upwards of 5000 are here attended during the year. The mortality is 1 in 12·27 in medicine—not a large mortality, considering that one of the physicians is a homœopathist.

HOSPICE DE LA MATERNITE.—This was converted into an hospital for pregnant women in 1814. Patients are admitted after they have completed their eighth month, or before that period, if in danger of immediate delivery. It contains 530 beds for patients not in labour, and 133 in small cabinets for those who are in labour, besides the beds for the midwives and apprentices. Females only are here allowed to study midwifery. They are under the surveillance of superiors, at the head of whom is the midwife *en chef*. The female students are taught the theory and practice of midwifery, as well as vaccination, bleeding, &c. Pupils presenting themselves must read and write well; be widows or unmarried, and produce proof of such being the case. They must produce a certificate of good morals from the mayor of the district; and, lastly, they must have been vaccinated, or have had the small-pox. They are allowed to go out six times a year during their pupilage, and then only when accompanied by their fathers, mothers, or some friend particularly mentioned. They are not allowed to study when pregnant. They are required to study twelve months from the first of July, when an examination takes place. The physicians attending the institution are Moreau and Gardin. The *accoucheurs* are Danyau and Dubois. The latter is accoucheur to the Empress—*en cas de besoin*. The *accoucheuse en chef* is Madame Cherrier—a woman perfectly qualified for her situation. The deaths at present are 1 in 19·1. Formerly they were 1 in 13. This vast change for the better was effected by cleanliness, and providing each patient with a separate bed. In 1850, the *accouchées* numbered 5786, of whom 302 died. Patients generally remain in the hospital twelve days, when they depart, carrying the infant with them. If they do not wish to retain the child, it is generally placed in

L'HOSPICE DES ENFANS TROUVES ET ORPHELINS.—It was long ago the custom to place a basket or cradle in the cathedral of Paris, in which were deposited the children of unknown parents. These were confided to persons who discharged the duties of mother and nurse, but who frequently *re-let* them to others, or even sold them to nurses who had lost the children of wealthy parents which had been confided to them. Many, moreover, were sold to mountebanks, who, by mutilating and disfiguring them, made them serve as amusement to the crowd. A child thus sold usually brought 15s. or 16s. sterling. When the number became so large that they could not be all received, a certain number were chosen by

lottery, and the remainder were abandoned to their fate. The institution is now firmly established in the Rue de l'Enfer. Children are placed with nurses in the country or in town, and these nurses are rewarded, if they can prove that they have treated their charge with kindness and attention. Before it became a rule that all children should be examined, &c., the number of deaths was enormous, and, even yet, it is far too great. In the third year of the Republic, 3,933 were admitted, of whom 3,150 died. Now the mortality is 1 in 7·7, while in private 1 in 14 is the average. Children are admitted into the hospital till they are ten years of age. When the child is received, it is numbered, and the hour of its arrival carefully noted down. A wet nurse is provided for it, and it is despatched to the country, where it remains till the age of twelve, when it is sent to the *Orphelins*. If not claimed, it remains under the care of the institution till it attains its majority. The number received is upwards of 5000 per annum.

The statistics for 1850 were:—

	Foundlings.	Orphans.	En Dépôt.
Boys,	1,822	219	667
Girls,	1,769	142	591
	<u>3,591</u>	<u>361</u>	<u>1,258</u>

There were in the country belonging to the hospital in question, on the 1st of January, 1850:—

	Boys.	Girls.
Entered during the year,	6,474	6,580
Left do. do.,	8,437	8,475
Died do. do.,	881	923
Remaining on 31st December,	792	757
Reclaimed during the year,	6,764	6,785
	<u>13</u>	<u>5</u>

In accordance with a law passed in 1850, children are educated after reaching their sixth year. The attending physician is M. Roger, author of works on auscultation, and on the diseases of children. M. Morel Lavallée is the surgeon.

HOSPICE DES ENFANS MALADES.—This contains 600 beds. Though as clean and as well attended as any hospital in Paris, phthisis makes terrible ravages here. The mortality is never under one in six. The most popular on the staff is Guersant, a prosy lecturer, but a good surgeon, eminently practical, and a favourite with the profession. He is president of the *Société de Chirurgie*.

HOPITAL SAINT LOUIS.—In the Faubourg du Temple, in the Rue Bichat, is situated this hospital for skin diseases, which contains 825 beds. These beds are generally all filled, and yet the occupants of them are very few in comparison with the number of out-door patients who daily present themselves. In addition to cutaneous diseases, syphilitic and rheumatic patients are also treated. Being situated in a populous section of the city or suburbs, where accidents are frequent, there is also a large field

for surgical practice. Out-door patients receive medicines, douche baths, &c., gratuitously. Between 7000 and 8000 in-door patients are treated during the year.

Cazenave has a *clinique* for diseases of the skin every Wednesday. Malgaigne and Denonvilliers attend to the surgical department. Malgaigne's proper theatre is the Ecole de Médecine, where students, in addition to being taught surgery, are listeners to the most eloquent dissertations that are to be heard within the walls of a college. They style him "*La Rachel de la Faculté*." Often have I listened to him with pleasure and admiration. The dark, sombre, ill-lighted lecture-room re-echoes his every sentence; his clear voice is heard in every corner of it. During my residence there, he was engaged in a sort of sketch of the history of surgery, which, it was said, would occupy three years. When dealing with the various theories that had from time to time been incautiously received, then adopted and afterwards rejected, sarcasm was his weapon; and instead of, in a laboured manner, reasoning on the fallacies which they contained, he would, with one bold stroke of satire, crumble them into nothing, not leaving sufficient *debris* to reconstruct anew. To the minds of students, this manner of summarily disposing of the various *pathies* is most convincing; for without any effort on their part in sifting evidence, &c., they jump at once to the conclusion, and wonder what benighted heathens their ancestors were. When Malgaigne had, in this way, completely refuted the theorists who were not there to answer for themselves, a few words would close the case; and few students would feel disposed again to resuscitate the dogmas, but, in the words of their master, exclaim "*Requiescat absurdum in pace*." In the St. Louis, Malgaigne's clinic is well attended. Here, again, I could not but admire the fertility of his genius, and the ease with which he seemed to infuse into those around a knowledge of the case. But this admiration was not unalloyed with pain at the seemingly trifling attention given to the patient's sufferings. The *lit infernal*, with other appurtenances of horrid warfare, belonging, it was to be hoped, to *un temps passé*, here meet the eye. The treatment of ununited fracture, by thrusting between the ends of the bone a wedge-shaped or pointed instrument, is a useless refinement of torture.

VAL DE GRACE.—The first stone of this institution was laid in 1645, in accordance with a vow made by Ann of Austria, it having pleased the Almighty to put an end to her twenty-three years' sterility in the birth of Louis XIV. It was converted in 1793, from a religious asylum into a military hospital, and as such continues to the present time. Admission to this hospital is granted but once a week; but M. Larrey, the *chirurgien en chef*, can furnish a *carte d'entree* at discretion, and it seemingly affords him pleasure to do so. Immediately after entering the outer gate, the eye cannot fail to notice a bronze statue by David, of Baron

Larrey, of whom Napoleon said, "*C'est l'homme le plus honnête que d'ai connu* ;"* and well was it for the lives of the wounded soldiers, and the honour of France, that he was "*honnête*." The wounded and sick soldiers occupy the ways, and the officers the intermediate buildings. The grounds attached are extensive and well cultivated. There is a botanic garden, a museum of comparative anatomy, cabinet of natural history, wax and soft anatomical preparations, &c. The surgeon, however, whose time is limited, seeks for the instruments, rude contrivances for arresting hæmorrhage, bandaging limbs, &c. ; balls and other missiles of warfare, which Larrey brought with him from many a field of carnage, bearing at the same time evidence of the fertility of his genius, and the scenes he witnessed. In Larrey's son, the present *chirurgien en chef*, we meet with a true representation of *un vrai Français* of the good old time ; graceful in his manner, exceedingly and really polite, paying due attention to the opinions of others, and advancing his own without ostentation. He possesses a considerable share of his father's industry, though, *on dit*, not his talent. The hospital can contain 4000 soldiers. Students were formerly educated in the Val de Grace for the army, but, since 1850, none but physicians are allowed to attend, who must pass a year there *en service* before entering the army. The mortality there is about 1 in 34.

HOPITAL ST. ANTOINE.—This, unquestionably, the model hospital of Paris, is situated in the suburb of the same name. It was at first a house of refuge for reformed prostitutes, but is now a general hospital. It contains 290 beds, and administers relief to upwards of 5000 annually ; the mortality is about 1 in 96. Chassaignac is the surgeon here.

HOPITAL DE L'HOTEL DES INVALIDES.—This hospital ranks among the most magnificent edifices of Paris, and is pointed at with pleasure and pride by those who envy not the comfortable and elegant home of the aged and maimed soldier. It was opened for soldiers in 1674, and contains about 3,500 men, 150 of whom are officers. Among the officers of the first division is a female, with epaulettes and sword, bearing the rank and title of *Sous-Lieutenant*. The deaths average one per diem, more than half of whom die between the ages of 70 and 80. Two physicians and three surgeons are in attendance.

I had jotted down in my note-book several more hospitals for being mentioned, but they possess little medical interest. I will name them, however. Maison Nationale de Santé, for those who are able to defray their own expenses ; Hopital Bonsecours, which administers relief to upwards of 5000 annually ; Hopital du Gros Caillon, to 6000 annually ; Hopital Militaire du Roule, containing 700 beds ; Asile Lambrechts, in the Rue des Colombes, for aged and blind Protestants ; Hospice Israelite, containing 100 beds, for

* The remains of Larrey rest at *Père la chaise* ; a pyramidal monument marks the spot, and the epitaph is those memorable words of Napoleon.

those of the Jewish persuasion ; Maison Hospitaliere d'Enghien lodges 60 men and 40 women ; Infirmerie de Marie Theresé, 32 ; Asile de la Providence, receives 60 old persons ; the Maison de Secours du Grand Orient, 24, and relieves with bread, meat, fuel, clothing, or medicaments, the maisons *en voyage*.

There yet remain a few establishments, which are deserving of more than a passing notice, as some of them, at their foundation, heralded a new era in the history of medicine. I allude to those institutions which are devoted to the psychological department of medicine. It requires no intimate acquaintance with French medical literature to be familiar with the writings of Pinel and Esquirol ; and it requires but a visit to Paris or its neighbourhood to be made familiar with the results of those writings. They taught that reason may be dethroned temporarily, that it may be replaced upon the seat it once occupied, and that gentleness and firmness, not harshness, are the means to be employed. How different from the time when madhouses served the purpose of a gaol—namely, to shut out from society individuals dangerous to it ! In every region where their condition engages the attention of philanthropists, the moral management of the insane is now acknowledged to be the only means of restoring reason. Insane persons are not now regarded as individuals who are incapable of knowing or appreciating kindness. And hence the change in our bearing towards them, which the precepts laid down by Pinel, and followed by Esquirol, have effected. In and around Paris, there are upwards of a dozen institutions for the management of those of aberrated intellect. Many of them, indeed, I believe most of them, are private. At these, as well as at the public ones, the air of cheerfulness of the inmates, and the appearance of those comforts which surround them, must afford indescribable pleasure to all those within whose breast one single note of pity responds to the voice of sadness.

There are other institutions not behind the preceding in useful importance. Deaf mutes form a large and important class in every community. Even at a time when Christianity had vanquished and overcome idolatry, the deaf and dumb were regarded, not only by the “vulgar many,” but also by the “polite few,” and even by theologians, as animals of an inferior class or order in the scale of being. And it was not until late in the eighteenth century, that *speech* came to be regarded as the mere *echo* of thought—that *mind* or idea or thought is associated with the human form, whether there exist means for manifesting the same or not. Isolated writers, it is true, had here and there endeavoured to put the public right in this matter, but their efforts were either too soon relaxed, or put forth with diffidence. Fortunately, however, a Wallis in England, and a Pereira, went diligently to work, and though unaided as we are by physiological science, placed the matter on a proper footing. The principal institution for this

purpose, is the Institution Imperiale des Sourds Muets, in the Rue St. Jacques, where 115 boys and 45 girls receive instruction. Children are admitted from the age of 9 to 15 inclusive, and are allowed to remain six years.

Almost every age and condition of persons have been provided for in the foregoing, except those who are enveloped—as far as the external world is concerned—in perpetual night; but the spirit of philanthropy has not left these uncared for. The Institution des Jeunes Aveugles, in the Boulevard des Invalides, and the Hopital Imperial des Quinze Vingts, are two establishments containing upwards of 500 young persons, who, in addition to receiving a good education, are taught some trade.

Having hurriedly glanced at the greater number of the Parisian hospitals, I will now say a few words regarding the management of them, and the features which least resemble those of similar institutions in Britain. In the latter, private charity erects and endows those institutions which have for their object the alleviation of diseased humanity; while in Paris, *l'Assistance Publique* is one of the richest and most perfectly organized corporations in France; a corporation, however, not free and unfettered, for Government interferes and appoints officers; but this interference disturbs not its harmonious working. It must not be supposed that any one is prevented from building an hospital at his own expense; but, as time wears on, the institution gradually merges into, and is placed under, the *surveillance* of the Administration Générale.

When an individual falls from a height, and is in danger of immediate death, he is borne to the nearest hospital, without reference to the *arrondissement* in which he may have been a resident. Should a person fall accidentally, or throw himself with a suicidal intention into the Seine (which, I may here observe, is a *very* frequent occurrence), and be fished up, some zealous person bears the intelligence to the “*Séours aux Noyés*,” and in a few moments the inanimate creature is surrounded with all those appliances which theory and experience have approved of for resuscitation. If time be allowed, he is carried to one of the places erected to receive such inmates, and, if recovery takes place, the patient is then carried to the nearest hospital. I have remarked, that the patient is *borne* or *carried* to the nearest hospital; but otherwise, it is not left to the discretion of an individual to seek admission into any one he may choose. If fit to be carried any distance, he is compelled to go to the Bureau Central, and there to receive a ticket for that hospital, to a place in which the nature of his disease peculiarly entitles him. At this Bureau, patients are prescribed for, on certain days, and receive bougies, catheters, bandages, belts, trusses, &c. &c., to take home. Let us follow them, however, to the hospital. On entering, their name is enrolled in a book kept for that purpose; they are conducted to the ward, and deprived

of their clothing, which is labelled and put away; the *interne* examines the patient, and orders him some refreshment, then to wait for the visiting physician. If the patient happen to fall into the hands of one of the clinical teachers, and his case presents some anomalous features, he may make up his mind to a frequent handling by the physician, *internes*, *externes*, and students—nay, perhaps by the nurses, for they too pretend to some little nicety in diagnosis. Let his case be an ordinary one, and all he will see of the visiting physician will be a hurried glimpse of his profile in passing. He is consigned to the care of the *interne*. The patient may fare better, if he be placed under the care of one who is not required to cater for novelties to students.

The number of patients consigned to the care of one physician is by far too great. Who, I would ask, is capable of prescribing for eighty or ninety in an hour? and the greater portion of that hour, too, may have been occupied with the examination of one or two. The hurried manner in which physicians pass through the wards is, to a considerable extent, compensated for by the care and attention of the highly efficient *interne*, apothecary, and other officers. Patients are much more at the mercy of these than of the attending physician, and more still of the sisters of charity, who act as nurses. The latter are in the constant habit of giving or withholding wine, &c., *à discretion*, much, too, to the annoyance of the physician; but the physician, never deaf to the pleadings of interest, and having an eye to the buttered side of his bread, makes a virtue of necessity, and says nothing. The *internes* are elected for four years from among the *externes*; these are elected annually from among advanced students.

The wards of the Paris hospitals are, generally speaking, too large, 70, 80, 90, and sometimes more, being confined in one room. The rooms, moreover, are not cheerful. Many of them have stone floors, stone walls, and even arched stone ceilings, from which condensed watery vapour is not unfrequently dripping. Some of the wards wear a very cheerless aspect, and were it not for the cleanly manner in which they are kept, the neat bedsteads, &c., the eye, resting continually on barred windows and stone vaults, might easily transport the inmate in imagination to the prison-house of malefactors. I say, *some* of the wards; for although these remarks are applicable to the great majority of them, yet there are many not inferior to those of the Charité Kranken Haus of Berlin, a description of which I have already given in a former number of this Journal. Yet there seems to be a too frequent infringement of hygienic law, not only in the shape, size, ventilation, &c., of the wards, and the material of which they are constructed, but also in the number confined in some of them. Many of the wards of the Hôtel Dieu, for instance, are so situated that the sun's rays cannot reach them *directly*. But rays of light are not only radiated, but also refracted; and the inmates, in

virtue of this law, can distinguish each other's faces. It is, perhaps, partly for this reason that the mortality—which at the Hôpital Cochin is 1 in 15·09, and which, among all the other hospitals, averages 1 in 12·07—amounts, in the Hotel Dieu, to 1 in 9·06!

The diet of the hospitals is divided into four kinds. The fourth, or most generous, consists of bread, soup, boiled meat, dry or fresh vegetables, in sufficient quantity, and wine. These articles are diminished in quantity and number at three, still further at two; and when one is reached, the low diet of the hospitals consists of—nothing. The bread consumed at the different hospitals is baked at the Boulangerie Générale, in the Rue Scipion. The meat is furnished by the Boucherie Générale, in the Boulevard de l'Hopital. Both of these establishments, like the hospitals, are under the exclusive management of the Administration Générale.

If Paris be rich in hospitals, houses of refuge, &c. (and all the world acknowledges this), she is not less so in the number and variety of medical societies. A stranger might, during a month's residence in Paris, visit a different one almost every evening. There are societies for medicine, and societies for surgery generally, and societies for the different branches of both. The great number of such societies may be accounted for partly by the fact, that all the principal members of the profession cannot occupy the presidential chair at the same time; and in the struggle for position, the disappointed candidate solaces his grief by creating, with the assistance of a few friends, that which fortune denies him elsewhere. I do not intend even enumerating all those which boast of a "local habitation and a name," but will content myself with mentioning those which furnish us with a mirror, as it were, of the doings of the profession in Paris.

ACADEMIE DE MEDECINE.—Considered the highest medical society in Paris, and to be member of it is a distinction much coveted, and bestowed with care and discrimination. The president is M. Berard.

FACULTE DE MEDECINE.—An institution pregnant with historic interest, having, with short intermissions, witnessed the various revolutions and endless changes that have occurred in the history of medicine, from the time when Charlemagne held imperial sway until the present hour. It has assisted at the birth of many a *pathy* during that period of time; it has consigned many to the tomb of the Capulets. It was not till the middle of the twelfth century that it assumed to itself the prerogative of a university, when the nature and objects of the *Faculté* were defined. In the beginning of the sixteenth century schools were built, and thence we may date the commencement of a system of instruction which, modified and improved, has in our day arrived at a degree of excellence which is scarcely equalled, and surely not surpassed

elsewhere. Even as early as this period, medicine and surgery seemed to be singularly jealous of each other; for physicians, fearing lest surgeons might overstep their legitimate boundary, thus define the province of the surgeon:—*Chirurgiæ professor, chirurgica tantum doceat; id est, quæ operationem manum pertinent.* The qualifications of a member were high. He required to be well known in medicine, and—strange qualification, too—a bachelor; for candidates, at their admission, were required to declare on oath that they were not married; nor were they allowed to marry when members, under pain of expulsion.

Connected with the Ecole, are a botanic garden, anatomical amphitheatre, Dupuytren's museum, chemical laboratory, library, hospital, &c. The chairs are filled by men of world-wide reputation—Velpéau, Dubois, Andral, Cruveilhier, Malgaigne, Trousseau, Piorry, Bouillaud, Nelaton, &c.; and at the time this paper was commenced, Roux and Orfila, now no more.

SOCIÉTÉ DE CHIRURGIE—Founded in 1843, for the purpose of advancing the interests of surgery, composed of 36 members. The Société Médicale d'Observation Perpendendæ et Numerandæ Observationes meets every Friday evening at the Hotel Dieu. The Société Médicale d'Emulation holds its sittings once a month; Société Medico Pratique every fortnight; Société de Médecine Pratique monthly; Société Médicale des Hôpitaux, composed entirely of the physicians to the civil hospitals, fortnightly. This society publishes its proceedings in the form of Actes de la Société Médicale des Hôpitaux. In addition to these, there are the Société Médico-Chirurgicale, Société Anatomique, Société de Pharmacie, Société de Biologie, &c. &c. The latter counts among its members Velpéau, Magendie, Andral, Bouillaud, Barth. The latter gentleman is president.

I have mentioned most of the Medical Societies of interest. It now remains to enumerate the advantages of a sojourn. In no school in Europe, probably, has the anatomist greater facilities for pursuing his studies than at Paris, subjects being at a mere nominal price. The botanist has a rich field open to his researches. The chemist can perform his synthetic and analytic manipulations, aided by every modern invention. The surgeon may witness the operative skill of France's best, and Europe's boldest (may I not add, rashest) surgeons. He may for a few francs engrave them indelibly on his memory, by repeating them himself on the dead subject. The physician may see nicety in diagnosis carried to a greater length than anywhere else—perhaps to a length that he would not be inclined to follow. These, then, are attractions which annually draw to the French capital a large number of the younger members of the profession, and candidates for degrees in that profession. A goodly proportion of both, perhaps, is sent thither by *fashion*; for this is the age of fashion, and medicine has caught the spirit of the times.

II. *By-gone Cases in Surgery*. By A. DUNLOP ANDERSON, M.D.,
F.R.C.S. of England.

Case I. Tumour in the Neck.—Matthew Spreul, carter, aged 30, was admitted into the Royal Infirmary, 10th May, 1824.

A tumour occupied the right side of the neck, from behind the lobe of the ear downwards as far as the clavicle, over the sternal edge of which its lower margin projected. Its greatest length in this direction was eight inches. Transversely, it extended from the margin of the trapezius muscle, as far forward as the larynx and trachea, which it had pushed nearly two inches out of their natural position, giving to the *pomum Adami* the appearance of another tumour on the left side. In this direction it measured six inches. It was of an unequally lobulated shape, chiefly firm, but soft and elastic on the largest and most prominent point. It was narrowest above, where it was confined by the angle of the jaw; but it expanded, and became more prominent towards the lower part of the neck, where it projected in a somewhat globular form, being at the same time diffused and undefined at its base, except where it rested on the clavicle. On the tracheal side inferiorly, a flat and doughy part was felt extending across the displaced wind-pipe, which had the feeling of an enlargement of the right lobe of the thyroid gland rather than a part of the tumour.

The upper part of the tumour sunk deep behind the angle of the jaw, to which it seemed firmly connected. On looking into the fauces, the tonsils and the tongue were seen raised from their natural position, and pushed towards the left side. Here the tumour was felt extending backwards from the second last molaris, pressing in and occupying the region of the tonsil, and extending downwards along the right and anterior part of the pharynx, as far as the finger could reach. Externally, the integuments were smooth and shining from distension, but natural, and he had no uneasiness from pressure. The tumour when grasped could not be drawn out from its connections, and it moved a little, though not entirely, in conjunction with the motions of the larynx in swallowing. The origins and insertion of the sterno-mastoid muscle, as well as the ligament of the angle of the jaw, were felt on the stretch. The lower edge of the tumour just admitted the finger above the clavicle, but the pulsations of the carotid artery could not be felt either here or superiorly. The motions of the head and neck were much impeded. Dysphagia from pressure on the gullet had been the prominent symptom for the last three weeks. This had daily increased, and he had become unable to swallow any solid food. In drinking, which he did with great difficulty, he was obliged to prevent regurgitation from the pharynx by closing the nostrils with the fingers; and he had supported himself entirely with substances taken in this way for the last fortnight. The

tumour was subject to paroxysms of acute stinging pain, varying in duration from one to twelve hours, after which he enjoyed long intervals of ease. Lately, also, he had attacks of severe pain and sense of fulness in the right temple, during one of which he became insensible. Had first observed this tumour two years and a half before. It was then about the size and somewhat of the form of a pigeon's egg—hard, not easily moved, free from pain, and traceable to no cause. It increased slowly and gradually, giving very little and only occasional pain, and not preventing him from working, until about four months ago, when it had attained the size of the fist. Since that time its progress had been more rapid, and the paroxysms of pain more severe, both in frequency and in duration, in the head as well as in the tumour. The pulse was 112, and the pulsations of the radial and temporal arteries corresponded. The voice was hoarse, and the respiration louder than natural, but he said it was easy. The tongue was whitish; thirst and appetite pretty natural; bowels regular; slept tolerably well when free from pain. Had become emaciated and weak within the last fortnight, owing, he thought, to his inability to swallow. He had used no remedies of importance.

While in the waiting-room for admission, this poor man was seized with violent pain above the right temple, accompanied by fainting, and followed by vomiting. The respiration became loud, though not stertorous; the pulse fell to 60, and the pupils appeared somewhat dilated. Fifteen ounces of blood were taken from the arm; in an hour the pain and other symptoms subsided, and gradually went off.

A consultation was called next day, but owing to the absence of several gentlemen, another was held on the day following, when I was favoured with the opinions of many friends. It was the unanimous advice of all present on this occasion, that the removal of the tumour should be attempted. In this opinion I coincided; but it is only justice to the gentlemen present, as well as to myself, to state that all were equally unanimous in affirming, that nothing but the urgency of the symptoms, and the certain and speedily fatal tendency of the disease, could warrant us in recommending so formidable an operation. The expectation, or rather the hope was, that the tumour might be found to be braced down by the fascia and muscles, and thus rendered apparently more firm in its connections than it actually was, and that thus the large vessels and nerves might be found uninvolved in the disease.

The patient was fully informed, both verbally and in writing, regarding the proposed operation, to which he immediately consented, saying that he had come for that purpose, and that he felt quite convinced he must soon die if nothing was done for him.

The operation was performed next day, in the presence and

with the assistance of many experienced surgeons, amongst whom was my colleague, the late Dr. G. Monteath, for whom I was acting owing to his ill health. The first incision was commenced about four inches above the sternum, on the anterior edge of the tumour, and extended in the direction of the sterno-mastoid muscle downwards to the sterno-clavicular articulation. By this incision it was found that the anterior part of the tumour was only covered by the platysma myoides and fascia, both of which were very thin. The external incision, which had previously been traced out with a pen, was now enlarged upwards to the back of the ear, and from thence in an elliptical form, including a portion of skin, it was carried down posteriorly so as to meet the first incision, which was prolonged about two inches on the sternum. I now proceeded to dissect back the integuments, and to separate the very close connections of the tumour with the larynx and trachea. In doing this, it was found, as I had anticipated, that the right lobe of the thyroid gland was enlarged; but it was readily enough separated by the handle of the scalpel, and did not seem at all changed in structure. The integuments all around were now further dissected off, and the margins of the diseased parts more distinctly defined. The sterno-mastoid muscle was found in close contact with the surface of the tumour, and bracing it down. A straight director was therefore passed under the origins of this muscle, and they were divided, along with the deeper-seated connections below, which resisted tearing with the fingers or handle of the scalpel—a practice adopted throughout the operation wherever it could be done. On raising the lower and anterior angle of the tumour, the carotid artery could be distinctly felt, and was readily grasped between the finger and thumb. Little blood had yet been lost, and none of the important nerves could yet have suffered; but a short time after the operation was begun, the patient had been seized with a very alarming fit of exhaustion and syncope, somewhat resembling that which he had had two days before in the waiting-room. The pulse now became weak and fluttering, and at last imperceptible, and from the long continuance of this state, there was reason to fear that death was about to take place. The sheath of the vessels was, however, opened with the dissecting forceps and scissors, and a ligature, on one of Abernethy's needles, was passed under the carotid, without any difficulty in avoiding either the vein or nerve. Our patient had not yet rallied in any degree, and the appearances were altogether so very unfavourable, that it was thought best to delay for a little the ligature of the artery.

In addition to the present unpromising symptoms, it was now found, that although the lateral connections of the tumour were almost entirely removed, its posterior attachments, and those behind the angle of the jaw, were still very firm, and there was every reason to fear, what indeed was the chief fear expressed at the

consultation, that the *nervus vagus*, at least, if not also the sympathetic, were inseparably connected with the tumour.

Under these circumstances, I requested the gentlemen present to give me their advice in consultation—for which purpose we withdrew for an instant to the lobby.

It was the unanimous advice that the vessel should be tied, notwithstanding the alarming nature of the symptoms; and, with one exception, it was recommended to persevere in removing the whole of the tumour. I therefore immediately tied the carotid, and divided it above the ligature, where it seemed to enter the lower surface of the tumour. No hæmorrhage took place from the upper orifice, which was not tied. From the weight and bulk of the diseased mass, some difficulty was here experienced in detaching the posterior connections, and I therefore removed with the scalpel about one-half of its anterior surface. The dissection was then continued without hæmorrhage until the whole was quite free, except at the upper and posterior angle, where it went deeply in towards the base of the cranium. Here I attempted to tear away its attachments, but found it impracticable, either with the fingers or rough-edged knife. The symptoms of exhaustion were now fully more alarming than before, and it was obvious that our patient must die on the table, if the operation was further protracted. I therefore grasped firmly the upper margin of the tumour, and partly by tearing, partly by cutting, I separated its deeper-seated connections with every appearance of a complete removal of the disease.

A profuse and very appalling flow of blood followed the division of parts by which this was effected. The blood came from several points behind the angle of the jaw; but as I could not get hold of any of the bleeding orifices, I immediately compressed them with the fingers, and then with a sponge thrust forcibly into the cavity between the jaw and spine. This, of course, was only a temporary expedient. On withdrawing the sponge and removing the pressure, two points were principally conspicuous. These I have no doubt were the orifices of the jugular vein, and of the internal carotid artery. The vein was at once secured by a plunge of the tenaculum, but the artery lay close upon the bone, and seemed to have been divided near its entrance into the cranium. The hæmorrhage was readily commanded by pressure with the point of the finger against the bone; but although several attempts were made to secure the vessel both by the tenaculum and forceps, yet no effectual hold could be obtained, until a pair of hooked forceps was employed, by which the bleeding orifice and some of the surrounding substance were included and fairly tied. Some smaller vessels were also now secured, and the hæmorrhage was completely checked.

Until this time the patient had remained nearly in the same insensible state, and I naturally concluded that this addi-

tional loss of blood would have put an end at once to his sufferings. My surprise, therefore, and my pleasure were great, when I found that he now rallied considerably. The pulse rather improved, and he spoke and swallowed wine and water repeatedly, and with much more ease than while the tumor remained. No discharge either of air or fluid took place from the larynx or pharynx, and it was evident that no opening had been made in either. They were much exposed, however, and the cavity which the tumour had occupied was very extensive. The edges were brought together, a bandage was applied, and the patient was carried to bed. The operation must have lasted nearly an hour, including stops.

I was sent for at five o'clock in the afternoon, as some hæmorrhage had taken place, and the gentlemen who attended had found it necessary to expose the wound and apply pressure. Only a few ounces of blood had been lost, and as there was but a slight oozing when I arrived, I contented myself with tying a vein from which it seemed to come, and a small artery. The wound was dressed from the bottom with lint, and the edges brought together with plaster. Warm applications to the stomach and feet, and brandy internally, were used, but he gradually sunk, and died soon after six o'clock, without any recurrence of hæmorrhage.

Inspection.—The tumour weighed 2 lbs. 6½ oz. Its greatest circumference was 17, and its least 15 inches. The anterior part was of a firm consistence and fleshy colour, having the expanded belly of the sterno-mastoid muscle passing over its surface, and the cut end of the omo-hyoid attached to it. The centre of the tumour, which had been extended by the section made during the operation, had much the appearance of brain. At most points it was firm, consisting of ligamentous and fatty matter; at others it was soft, and broke readily under the finger. The great vessels and nerves were found embedded in the posterior fourth of the tumour, through nearly its whole extent. The carotid artery divided into external and internal in the substance of the tumour, and these had separately been cut behind the angle of the jaw. Several very large veins could be traced passing through the tumour towards the chest, but no pervious trunk of the internal jugular could be discovered.

A pipe was now fixed in the carotid of the left or sound side, and water pushed with force into it escaped only by the arteria media duræ matris, which had previously been divided in removing the skull-cap. The ligatures were then cut off from all the vessels which had been tied at the angle of the jaw and base of the skull, and, on pushing the injection again into the carotid, a clot was first discharged, and then the water flowed freely from the canalis caroticus, proving that the hæmorrhage from behind the angle of the jaw during the operation was by regurgitation through the internal carotid artery, which had been effectually secured. There

was no disease in the brain. The wound was next examined. No portion of the tumour had been left. The carotid artery had been tied half an inch above its origin from the innominate. The internal jugular vein was here, as well as above, impervious. Its coats were seen in contact with the artery, but it appeared to have been obliterated by pressure on the clavicle. The *par vagum* had been divided, both below and above, at its points of entrance into the tumour. At its lower part it appeared rather larger and more pulpy than usual. The sympathetic nerve had also been divided below its middle ganglion, where it passed into the substance of the tumour. Several small branches in the course of this nerve could be traced, keeping up an imperfect connection with those nearer the cranium, and with the spinal nerves. The recurrent nerve of the eighth pair was uninjured, as well as the deeper-seated branches at the root of the neck. The inferior thyroid artery remained untouched, and appeared as if it had been very carefully dissected. The right lobe of the thyroid gland was somewhat enlarged, but of its natural colour and structure, and did not seem to have formed any part of the tumour, although its edge was slightly lacerated in detaching the diseased parts from it. At the upper part of the wound, many vessels were seen to have been divided. The internal jugular vein, the external and internal carotid arteries, the occipital and external maxillary arteries, had been tied, and a small portion of the lower angle of the parotid gland had been removed. The thorax was not examined, owing to the impatience of the friends.

Observations.—The history of unsuccessful operations is seldom communicated to the profession, but such cases are, in many respects, the most instructive of any. The details of a successful operation, however gratifying it may be to the surgeon who performs it, or however useful in teaching us the resources of our art, is still defective in supplying us with negative information, or, in other words, it fails to point out to us what may *not* be attempted without danger, or even without death.

From the result of this case, it may be inferred by some that no operation should have been attempted, and that our patient should rather have been allowed to die, as he was about to do, from inanition or suffocation. Acquainted, as we now are, with the extent and important nature of the parts involved, it cannot be denied that such an inference may seem to be just; but what were the circumstances presented to us before we could acquire this knowledge? A patient in the prime of life telling us that he feels himself gradually dying from inability to swallow, produced by an evident cause, and when in the very act of speaking, suddenly seized with a fit which threatens to carry him off before our eyes. Anxious for an operation, and, though aware of its formidable nature, still urging it from his conviction that it is his only chance of living. This much in regard to the patient and

his feelings. As to his disease : in almost every surgical point of view, it was no doubt very unpromising. Its situation, its size, and its feeling of firm and deep attachment, all tended to lessen the chance that existed of success from an operation. That such a chance did exist, however, was my decided opinion from the first time I examined the tumour ; and in this view I did not hesitate to act when supported by the unanimous opinion of so many of my brethren, convinced, as I was, that this was a case where the feelings of the surgeon, connected with a hazardous and probably unsuccessful operation, should not be allowed to have any influence in his decision.

Judging from the anatomy of the parts, and the changes induced by the bulk and pressure of such a disease, we were naturally led to dread the difficulty that might occur from the contiguity of the large vessels and nerves. "The first point to be ascertained," says Mr. Allan Burns, "is whether the tumour be free from adhesion to the artery ;" and he proceeds to give directions for this purpose, by grasping the tumour with one hand while the other is placed on the artery below. But in our case the carotid artery could not be felt at all, owing to the size and extent of the tumour ; and although its motions were no doubt very confined, yet this was necessarily the case from the muscular imprisonment of the parts by the sterno-mastoid muscle, under which it was evidently placed. This test, therefore, was wanting.

"The question," says Mr. John Bell, "is a very awful and serious one when the tumour is seated beneath the mastoid muscle, projecting from under it in consequence of its great size, and probably connected at its root with the sheath which includes the carotid artery and great jugular vein. Such a tumour, if firm, glandular, growing rapidly, and pressed inwards by the perpetual bracing of the mastoid muscle, will connect itself so with the parts beneath by adhesion, as to make its extirpation dangerous in the last degree," (but mark what follows,) "and it will, at the same time, press so upon the throat as to make the attempt an act of necessity and duty."*

Mr. Bell next gives a case in many points resembling that of Spreul. The tumour was, like his, covered by the mastoid muscle, and had displaced the larynx and produced dysphagia, and so much dyspnoea "that the patient could no longer sleep at night, but started out of bed, partly from suffocation, partly from fear." The operation was successful, the artery and nerves being still free, although in close contact with the tumour.†

* Principles of Surgery, vol. iii., p. 230.

† See also case of Tumour of the Neck, removed by Mr. Goodlad—*Medico-Chirurgical Transactions*, vol. vii., p. 112, vol. viii., p. 582. See also Mr. Carmichael's case in *Transactions of King's and Queen's College of Physicians*, vol. ii., p. 101; Mr. Adam's cases in *do.*, vol. iv., p. 222 ; and Dr. Warren's cases "On Tumours," Boston, 1837.

In Mr. Vincent's case, in the twelfth volume of the *Medico-Chirurgical Transactions*, the tumour "occupied the whole of the right side of the neck, extending from the ear to the clavicle, and laterally from the edge of the trapezius to the trachea, projecting in a proportionate degree beyond the natural contour of the neck. It had a lobulated feel, the integuments being free over it, and at first view it appeared moveable, but when grasped it was evidently firmly connected at its base." In the operation, a portion of the tumour was found in connection with the large vessels in the whole of their course. "One portion passed behind the internal jugular vein, and another was in contact with the pleura." Each of these, however, could be drawn out from its situation and removed. The wound healed, and the patient was dismissed in five weeks, but died afterwards from an affection of the lungs.

Here, then, was a tumour, nearly of the same magnitude, and occupying the same position with that of Spreul. It was also firmly connected at its base, and in contact with, and even surrounding, in a certain degree, the larger vessels, and yet it was successfully removed.

The account of this case certainly encouraged me in the attempt to remove the tumour of our patient; but the structure of the diseased parts turned out to be quite dissimilar, the one admitting of easy separation from the vessels and nerves, the other being completely blended into one substance with them.

"Where the gland," says Mr. A. Burns, "has originally been placed behind the carotid, it will often be found that the tumour has risen up on each side of the artery, so as to bury it; the jugular vein, &c., in the centre of the morbid parts." This, most probably, was the real origin of the present tumour, at least if we may form our judgment from a review of its early history and its subsequent progress. It was at first about the size, and somewhat of the form, of a pigeon's egg; hard, not easily moved, and traceable to no cause. Its increase was slow and gradual, giving very little, and only occasional pain, until after it had attained the size of the fist. From this time, it may naturally be supposed that the pressure on the important parts began to be more felt, until, at length, it produced those paroxysms of pain, followed by fainting, already alluded to. But whatever might have been our fears, we were not on this account alone entitled to decide that such was the state of parts. On the contrary, in determining the course to be pursued in all cases of this description, where the mere *chance* of success, not only warrants, but demands an operation, I conceive that the favourable view should be taken wherever it can be done, while, at the same time, we should never forget the possibility of a different result.

I am not aware of any case where both the *par vagum* and sympathetic nerve have been divided, either by wound or operation, and it therefore becomes an interesting subject of investigation

to ascertain whether the very urgent symptoms during the above operation were produced by this cause, and whether the division of these nerves was the immediate cause of death.

The first circumstance that presents itself, is the fact of the patient having previously had several severe fits, somewhat resembling epilepsy, and being apparently seized with one of these early in the operation, and before any division of the nerves had taken place. I had some difficulty in accounting for the early occurrence of these symptoms; but on examining the tumour, and observing the complete envelopment, both of the nerves and vessels, by the diseased mass, and the pressure which they must have suffered previous to, and particularly during, the operation, I was satisfied that this, along with the agitation of mind and debility of body, was sufficient to induce the effects observed. This view of the subject is in some degree confirmed, by an account of several cases of bronchocele, detailed by Dr. Malden of Worcester, in the *Medical Repository*, which proved fatal, in some instances, from direct pressure on the trachea, but in others evidently by the nervous irritation and the obstruction to the flow of blood from the brain which they produced.

It is quite natural to suppose that the agitation of this poor man, on first presenting himself in the waiting-room, should produce an increased determination of blood to the head. The complete obliteration of the trunk of the right internal jugular vein preventing the free return of the blood, I have no doubt induced the paroxysm described. The same causes may have had some effect on the early occurrence of this state during the operation; but there was also, at that time, an additional direct pressure, and probably much nervous irritation from the necessary steps of the operation.

The experiments by Mr. Cruikshanks and Dr. Haighton, related in the eighty-fifth volume of the *Philosophical Transactions*, and the more recent experiments of the late Dr. John Reid, in his *Physiological and Pathological Researches*, have satisfactorily proved that both the par vagum and the sympathetic nerve may be divided, on one side, in the dog, with only temporary inconvenience, chiefly from indigestion; that both nerves unite again even when a part of each has been removed; and that *then* their functions are restored. It is but reasonable, therefore, to infer that the same would hold good with respect to man, and that, if these two nerves had simply been divided without other injury, it was quite possible that the patient might have survived. In the case of Spreul, there certainly was not any very marked affection of the muscles of respiration, such as is described to occur from division of these important nerves. What then was the cause of death? I answer, that it was neither the injury of the nerves, the loss of blood, nor the magnitude of the wound, but rather the united effects of the whole on a constitution previously enfeebled

by inability either to swallow or digest proper nourishment. It is much to be regretted that this case did not come earlier under operative treatment, as I feel satisfied that the tumour might then have been safely removed, notwithstanding its important attachments.

In conclusion, I remark that, notwithstanding the unfortunate result, I am still of opinion that the removal of the tumour was clearly indicated by the urgency of the symptoms it had produced; and that there was, previous to the operation, a small, but yet a reasonable, prospect of success.

Case II.—Aneurism by Anastomosis.—October 9, 1828.—An unmarried lady, 25 years of age, of a sound constitution, was observed, about fifteen years ago, to have some unnatural fullness, without discoloration, on the right cheek. She had no uneasiness, however, and it attracted little attention. Several years after this, Mr. T. Blizard of London, when on a visit to Glasgow, examined the part, which was felt to pulsate; and after consultation with the late Drs. Cleghorn and Nimmo, and Messrs. Anderson and King, it was determined to tie the facial artery where it passes over the lower jaw. This operation was performed by the late Mr. Anderson, and an instrument constructed by Dr. Nimmo, for applying pressure by means of a screw, which acted on small plates of silver within and without the mouth, was worn for about 48 hours. But the pressure gave great pain, and seems to have occasioned some sloughing of the cheek, of which there still remain two small marks externally. It does not appear that any obvious diminution of the swelling was effected by these measures, but the disease did not perceptibly increase, and nothing further had been attempted, when I was consulted about six weeks ago, in consequence of an increase having then become apparent both to the patient and her friends. The following were the appearances presented:—

A soft, elastic swelling, communicating pulsation to the finger, but not to the eye, occupied the substance of the right cheek, from the angle of the mouth to the anterior margin of the masseter muscle, and from immediately below the infra orbital foramen, to half an inch above the lower margin of the inferior jaw. The substance of the cheek at the most prominent point, viz., about an inch from the angle of the mouth, was fully double its natural thickness, and here the pulsation was most forcible. The tumour, however, was diffuse and ill-defined; and towards its circumference the pulsation was only felt in separate vessels, leading in a tortuous course into it. Of these, the coronary arteries of the lips, the transverse artery of the face, anastomosing branch from the temple and nose, and from the infra orbital foramen, together with several vessels in the vicinity and course of the facial artery, where it had been tied, were the most distinctly felt, but all of the small vessels around were evidently enlarged. The skin over

the most prominent part, or that which might properly be called the tumour, had within the last few weeks become slightly purple, especially when the circulation was excited; and it was chiefly within this period that a feeling of fulness, and occasionally of slight shooting pain towards the temple and nose, had been noticed. On applying pressure to the trunk of the common carotid artery, the pulsation in the tumour and in all the adjoining arteries was completely checked; and on removing the pressure, the return of pulsation was immediately as strong as before, without any thrill or sensation of slow distension, as if from cells. General health good. Catamenia regular, but subject to headaches at these periods.

From the gradual increase, the present magnitude, and the serious nature of this affection, I was induced to request a consultation with Professor Burns.

After minute examination and deliberation, it was agreed, before any severer measure, to attempt checking the disease by tying as many of the enlarged arteries which supplied it as could be effected.

On the 15th September, in presence of Dr. Burns, I exposed and tied a large vessel passing over the lower jaw, a little anterior to the seat of the former operation; and it was intended to have treated all the other vessels which were within reach around the tumour in the same way. But the ligature of this artery produced no influence on the pulsation, and the prospect of success from this practice was so small, that the prosecution of the experiment was altogether relinquished. The vessel which was tied appeared healthy, and the ligature came away in a few days.

Three different plans of procedure, from the first, chiefly presented themselves for consideration. These were—

1. The complete removal of the diseased structure by excision with the scalpel.

2. The ligature of the common carotid artery, with the view of obliterating the affected vessels.

3. Leaving the case to nature, with the hope that its progress might be slow, or that it might remain stationary.

To each of these, it is but too evident that very serious objections might be urged.

- I. The excision of the part, which is considered the most effectual measure, must necessarily be a painful, severe, and even dangerous operation, involving the division of the parotid duct, in all probability requiring the application of the actual canter to check hæmorrhage, and certainly leaving a great degree of deformity of the face.

- II. The ligature of the common carotid artery is also attended with danger, and although it appears to have proved successful in cases of this description, when the tumour was seated in the orbit, yet it has failed in others. The free anastomosis also, which in

this case are felt to exist with the branches of the opposite side, together with the ready communication which is *known* to exist in the base of the skull, prevent the possibility of placing confidence in this as a measure of certain or permanent efficacy.

III. Desirable as it would be to avoid the performance of any operation, especially under the circumstances of difficulty attending this case, it must not be forgotten, that there had lately been an obvious increase of the disease; that it had attained an extent which already almost precluded the practicability of removal with the knife, or at least must very soon do so; and that, notwithstanding the occasional slow progress of these affections, their general and almost uniform course, when a decided increase of action has supervened, is towards a fatal termination from repeated attacks of hæmorrhage.

Entertaining these views, and fully sensible of the difficulties of the case, the proposal of a consultation in Edinburgh was willingly acceded to, and for this purpose I accompanied the patient to that city. The following is the substance of the late Dr. John Thomson's opinion:—

1st, The disease, even in its natural crisis, is not so alarming as above described; for, as it is seated in a congeries of small vessels, the only likely result is the rupture of one or other of these, the hæmorrhage from which would not be great, would likely stop of itself, and could be easily commanded.

2d, There is no present symptom of immediate danger, and the disease may proceed to a much greater length without there being any.

3d, The nature of the disease, as ascertained by experience, is very frequently to remain stationary, or nearly so, for long periods, and even to come to a spontaneous stop. The patient may therefore live long, without the affection giving more trouble than at present.

4th, The operation of excision, although no doubt, in its nature, calculated to eradicate the disease, is not at all so certain, as that, even with the utmost care, there may not remain the germ of another diseased growth.

5th, The operation is one of a serious and severe character, attended with a certain measure of risk, and sure, both from the extent to which the cheek must be cut, and the probability of requiring the actual cautery, to produce, not merely a worse deformity than any swelling of the cheek can be, but a very great disfiguration, such as would probably prevent the patient from ever going into society.

The following extracts from correspondence with Mr. Blizzard contain the substance of his views of the case:—

“As the measure which, I fear, may be advisable, is more bold than I should feel justified in urging, without an opportunity of examining the case, I beg that you will consider it as submitted

for your consideration, and that of your colleagues, who can alone determine whether the probable consequence of allowing this growth to proceed will justify it. The disposition to increase of the tumour, which has lately manifested itself, and the purple appearance of the skin, are strong evidences of the progress of the complaint. And the question in my opinion is, whether the whole of the tumour can be safely removed; for, from the free communication of the vessels of the face, and the experience you have already had of the little effect of tying single vessels, there is not much inducement to pursue this practice. I should almost fear, from the free anastomosis of the vessels of the head, that, if even the trunk of the carotid artery were tied, the progress of the disease might still continue. I am led to make this remark, in consequence of your mentioning the effect of pressure on this artery. I have endeavoured from your description to comprehend the extent of the tumour, and I am inclined to believe that it is removable, but without an actual examination I would not pretend to decide upon this point. The hæmorrhage will be considerable, but this in a great measure will be commanded by pressure on the common trunk of the carotid. The duct of the parotid gland, also, will require attention. With regard to disfigurement, which will very naturally be thought of, I have no hesitation in saying that it will be very little. We have all had experience of extensive wounds of the face, with considerable destruction of skin, and we know what slight traces are left when the parts have healed."

A detailed statement of the case was now sent to Sir Astley Cooper, from whom I had the following answer:—

"Miss ——'s case I have read with great attention, and have arrived at the following opinion:—

"The mode of treatment which I have seen most effectual in similar cases, although in different situation, has been to secure the swelling in a ligature, by passing a large needle through the swelling, and another at right angles with the first. The needles should pass close to the membrane of the mouth, at the basis of the tumour. Then a ligature is to be carried under the needles, to enclose and surround the tumour, which is then to be left to slough. In this operation there is no danger of bleeding, or of any untoward circumstance. This, then, is my *opinion*; and there is but one doubt about the case, which is that, whether it be possible to effect this plan from the inner side of the mouth or not, as it would save the patient from a scar. This varicose tumour is not dangerous to the patient, but it is a great object for other considerations to remove it."

The following is the opinion delivered by Mr. Syme, who examined the patient while in Edinburgh:—

"As the tumour possesses all the characters of aneurism by anastomosis, and as the patient positively asserts that it has in-

creased within the last seven months, notwithstanding the check afforded by tying one of its feeding vessels, there is every reason to expect a progressive and accelerated enlargement.

"As the disease is a source of great deformity, uneasiness, and danger, both immediate and prospective, it ought to be cured, if within the reach of surgery.

"As pressure has been tried without success, and as experience in this and similar cases has proved that ligature of the vessels, though it may palliate, is quite inadequate to cure the complaint, the only remedy is excision. As excision, when properly performed, when the disease was within reach, has been uniformly successful—and as Miss ——'s tumour is at present confined to the cheek, so that it might be completely eradicated—I strongly recommend that it should be cut out with as little delay as may be possible. If the disease extends a little further, it will encroach on parts not accessible to the surgeon, and, granting that this difficulty could be overcome, will affect the skin so widely, as to prevent the possibility of bringing the edges of the wound together. At present there is every probability that sufficient integuments may be saved to admit of union by the first intention, in which case the patient would be little, if at all disfigured."

"Were I employed," says Mr. Liston, who was consulted at the same time, "to remove this tumour (of the propriety of which I am perfectly convinced, from its rapid growth), I should prefer doing so by ligature from within the mouth, as that mode would be attended with neither risk nor deformity."

I add some further observations from Mr. Blizzard, in answer to a letter, in which I had informed him of the different opinions that had been obtained:—

"I am fully sensible of the embarrassments you have to contend with in this case. Much may be said for and against an operation. If the tumour were of a malignant character, and threatened the loss of life at no very distant period, it would become the duty of her surgeon to urge its removal, notwithstanding the difficulties attending the operation; but as the object is the removal of an unseemly appearance, which, although it may increase, may continue for a long life without further evil, *the decision must be left to herself*. With a view to check its increase, evaporating lotions, and the application of ice in a thin bladder, present themselves as probable means of obtaining this end.

"I shall take the liberty of making a few remarks on the operations which have been suggested. And, in the first place, with regard to the ligature of the trunk of the carotid, our knowledge of anatomy forbids our placing sufficient confidence on its effect, to justify a hazardous operation. The ligature, according to Sir A. Cooper's plan, would be excessively painful and tedious, as, in consequence of the bulk of parts to be included, it would most probably require a renewal of ligatures to accomplish the

death of the parts. I say nothing of the operation from the inside of the mouth, as I do not believe it practicable. The treatment, also, by numerous separate ligatures,* would be attended with great difficulties. If I were called upon to operate, I should have recourse to the scalpel. I should not be over-nice in removing every particle of the tumour (and, particularly in the neighbourhood of the parotid duct, I would rather leave a little, than hazard the division of the duct), for I believe that the inflammation, and consequent suppuration, would so effectually change the structure as to prevent any future increase. A prudent and cautious use of the actual cautery would probably be necessary."

After carefully re-examining and measuring the diseased surface, with reference to the operation of Sir A. Cooper, by means of the needles and ligature, I was convinced of the total impracticability of any attempt of this kind, either from the mouth or externally.

At our first consultation, I had proposed to Dr. Burns an operation somewhat similar to that of Sir A. Cooper. This was to surround the whole tumour with separate ligatures, each of which should be made to embrace a part of the sound substance of the cheek exterior to the disease, without perforating the membrane of the mouth. When this had been done, the isolated and now pendulous tumour might be tied with one ligature, so as to make it drop off. But the portion of the cheek involved in the disease measured two and a half inches from above downwards, and more than two inches from the angle of the mouth outwards. This, therefore, as well as Sir Astley's plan, would be attended with much pain and inflammation, and must of course leave a scar in proportion to the loss of substance. The extent and thickness of the parts to be killed by the ligatures would render the completion of this operation tedious, and it is not improbable that an attack of erysipelas might ensue, by which the whole process might be interrupted. Under these circumstances, I did not consider it proper to change the ground I had originally taken; viz., to express a decided preference to the operation of excision with the knife, but to leave the decision as to the performance of *any operation* to the patient and her friends.

After the favourable opinions received both from Dr. Thomson and Sir A. Cooper as to the harmless nature of the disease, as far as life is concerned, it was no matter of surprise to find that the decision came to was against the performance of any operation.

Upwards of three years after the above consultations were held, it still remained a matter of difficulty to determine whether the proper course had been pursued. The patient's general health was nearly as at first reported, but the local affection had greatly increased. The whole cheek might now be said to be involved in the disease, the surface was permanently discoloured,

* This was a proposal of my own.

the veins enlarged, the pulsation in the arteries and throughout the tumour much increased, the substance of the cheek was nearly three inches thick, and the disease had lately extended to the angle of the mouth and lips, which were somewhat everted. The tumour also projected into the mouth, and was in risk of injury during mastication. The branches of the seventh pair of nerves on the face were occasionally affected with spasmodic irritation, and the part was rendered uneasy by all excitements of the circulation.

It was quite obvious that no operation could then have been performed with safety or propriety, and it was every day becoming a matter of more painful interest to determine how far the favourable prognosis given would prove correct. Happily that question seems now settled. The tumour, which had increased considerably, and from which occasional hæmorrhage had taken place into the mouth, has now (Sept., 1855) remarkably diminished in bulk, and there is an almost entire absence of pulsation. The cheek is still somewhat deformed and conspicuous, and a portion of the mucous membrane at the angle of the mouth, about the size of a small marble, projects outwards, as it does also within the mouth, where it formerly interfered with the teeth. The patient wishes this removed, and I have told her it could readily be done by ligature. But the *expectant* practice has proved so much preferable to what the *operative* could have effected, that I am not inclined to urge any interference.

III. *Report of Medical Cases treated in the Glasgow Royal Infirmary.* By Joseph Bell, M.D., one of the Physicians to the Infirmary.

(Continued from page 232.)

III. DISEASES OF THE ORGANS OF CIRCULATION.

1. *Pericarditis*.—Of this affection fifteen cases were admitted. These may be arranged as follows:—

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|-----|-------------------------------------|
| (a) | Traumatic, one case. |
| (b) | Complicated with Rheumatism, eight. |
| (c) | Phthisis, two. |
| (d) | Peritonitis, one. |
| (e) | Pleuropneumonia, one. |
| (f) | Hypertrophy of heart, two. |

Though all these cases were highly interesting, yet our space will only permit the insertion of those which are peculiarly worthy of notice.

Case X.—*Chronic Traumatic Pericarditis*—*Extensive Hydro-pericardium*—*Strumous enlargement of mesenteric glands*—*Ulceration of intestines*—*Perforation*—*Death*—*Inspection.*

J. M' —, aged 22 years, a coal miner, admitted January 20th.

—Patient of a strumous constitution; he complained of debility, dry cough, difficulty of breathing when he exerted himself; had also a feeling of weight at epigastrium. Stated that, about a year ago, a large fragment of coal fell on his chest. This was followed by inflammation, for which he was bled and blistered; but he has never been able to resume his occupation.

On examination of chest, the intercostal spaces of the anterior and lateral regions of chest were found completely obliterated; the lower part of sternum and costal cartilages somewhat elevated, and pressure detected slight cedema. On the posterior aspect, the intercostal spaces well marked. On *percussion*, complete dulness detected over the whole *anterior regions* of chest, from the upper margin of second ribs downwards; from the centre of both axillæ, commencing at the second rib, the dulness extended, in an oblique direction, over the lateral regions to base of chest. Posteriorly, the sound on percussion was clear; position of the patient had no effect on the dulness. *Auscultation* detected no respiratory murmur over the whole extent of dulness; no bronchial breathing; no vocal resonance. Beneath the clavicles and at upper parts of axillæ, a submucous rale was audible. Posteriorly, respiratory murmur puerile. Succussion elicited nothing abnormal. The sounds of heart were heard in the usual region; they were normal as to rhythm, but not very distinct. No murmur, and no impulse could be felt. Pulse 96, feeble. In epigastrium, immediately below ensiform cartilage, there was a conical prominent tumour; it extended to near umbilicus; it was soft and regular in its outline; when the patient sat up, it became much more prominent. The patient could lie with ease in any position. The bones of several fingers and toes were severely affected with scrofulous inflammation; deep and numerous scars on neck marked the site of severe ulceration. Bowels regular; appetite tolerable.

Diagnosis.—1st. *Phthisis*.—The extent of dulness and its situation, the absence of any breathing sound, either normal or abnormal, the clearness on percussion at the apices of the lungs, indicated that the disease was not phthisis.

2d. *Chronic Pneumonia*.—The absence of bronchophony, vocal fremitus, tubular respiration, the obliteration of the intercostal spaces, the feebleness of the heart's sounds, and absence of impulse, proved that the case was not one of chronic inflammation of the pulmonary tissue.

3d. *Inter-thoracic Tumour*.—Had a solid or semisolid body been present, the sounds of heart and its impulse would have been increased, instead of being diminished. The physical symptoms, therefore, indicated that the lungs and heart were forced to the posterior part of chest by a collection of fluid. Of this there could be no doubt. Still, however, there was great difficulty in determining the nature of this fluid.

1st. *Empyema*.—If the case had been one of chronic empyema,

the fluid must have become sacculated, as it did not gravitate to the posterior part of chest when the patient lay on his back. But even though a purulent collection might have been kept in the anterior part of the chest, in consequence of adhesions, yet it was by no means probable that it would occupy both sides of the chest in the same uniform manner and to the extent as in this case; besides, the patient wanted the usual sallow appearance that attends chronic empyema.

2d. Hydro-pericardium.—Though several cases are recorded in which large collections of fluid existed in the pericardium, yet the dulness in these instances was confined to the left side, and signs of fluctuation were detected. Consequently, I very quickly dismissed the notion of chronic effusion into the pericardial sac.

3d. Serous Cysts in the Anterior Mediastinum; or, lastly, a Strumous Abscess in the same situation.—In consequence of the strongly marked strumous constitution—the origin from an injury—I came to the last conclusion. The immense extent to which such chronic abscesses attain is well known. Under this impression, he was put *under cod-liver oil and tonics*. The tumour at epigastrium increasing, I entertained some fears that it might open into the abdominal cavity. I therefore asked the opinion of one of my colleagues as to the propriety of performing paracentesis. The case being so anomalous, this step was not deemed justifiable. I then ordered a repetition of blisters to epigastrium, on the same principle as they have been used in cases of hepatic and pelvic abscesses. He had three of these blisters applied, with the apparent effect of lessening the size of tumour.

On the evening of the 18th March, he was seized with severe purging, vomiting, and pain in abdomen; during the night he became delirious, and died early next morning.

Inspection.—Thorax.—Considerable difficulty was experienced in turning back sternum, in consequence of firm adhesion between it and pericardium, the anterior mediastinum being completely obliterated. The pericardium was enormously distended. It occupied the whole anterior and lateral portions of chest, adhering most firmly to costal pleura, from which, at some parts, the careful use of the scalpel failed to effect its removal. The sac was carefully opened, and *six imperial pints* (121 ounces) of a thin yellowish fluid, containing numerous flocculent particles of fibrine, were withdrawn. After the fluid was taken away, when we looked into this immense bag, it seemed to fill the whole thoracic cavity, extending not only laterally, but backwards almost to vertebræ. The walls of the pericardium were much thickened; its interior surface was roughened with extensive depositions of fibrine. Heart was reduced in size, its muscular structure nearly destroyed, and replaced by a thick organized fibrinous coat, so firmly attached to heart as not to be separated—a section showing the relation of the tissues. The outside of this adventitious covering had the

same roughened appearance as the interior side of pericardium. At base of left ventricle, a round strumous tumour, about the size of a plum, was found; it nearly obliterated the muscular substance.

Every care was taken to dissect the pericardium out entire, with the view of preservation; but this was found quite impossible, in consequence of the extensive and firm adhesions to the thoracic parietes. We were obliged to cut through it in order to reach the lungs, which were found much collapsed, each being about the size of an open hand; the vesicular structure near the pericardium was quite collapsed; the organs were of a dark melanotic hue, in consequence of containing a large quantity of carbonaceous matter.

Abdomen.—There was found a considerable quantity of milky and yellowish fluid, in which numerous patches of fibrinous matter were floating. The greater portion of peritoneum was highly congested. The mesenteric glands were most extensively and enormously enlarged; some were as large as small apples, and few below the size of a common marble. On making sections, they were found to contain cheesy-like matter, in numerous instances softened in the centre. The intestines were carefully examined before removal. About four inches from cæcum, a perforation was detected in the ilium, having dark and ragged edges. The intestines were carefully removed and opened; the perforation was found to have taken place in the centre of a large ulcer, about the size of a crown-piece. Within the space of six inches (taking the perforation as a centre), two other ulcers existed of nearly the same extent, and reaching down to peritoneal coat. Numerous smaller ulcers also existed in ilium, some as large as a shilling.

Remarks.—I deem this case as almost unique in the following points:—

1st. *The quantity of fluid contained in pericardium.*—Corvisart relates a case in which four pints (French) were found; but in his case the dulness was confined to the left side. Louis relates a case in which a pint and half (French) existed. In this case, also, the dulness was confined to left side. Dr. Corrigan met with a case in which the distention of the pericardium reached to the first rib. Several other instances have been published; but symptoms connected with the action of the heart, combined with the situation of the dulness, removed any difficulty in forming a diagnosis. But in the case which I have now narrated, we had no irregular action of the heart, no difficulty of breathing, unless on exertion, no œdema, no lividity of face or lips; and, in the second place, we had the dulness extending equally, indeed symmetrically, over both sides of chest, occupying whole extent of the anterior and the greater part of both lateral regions of chest. I therefore consider that the case is unique, both as regards the amount of fluid contained in pericardium, and the absence of the

usual symptoms. In the instance recorded by Corvisart, the patient "ne pouvait se coucher horizontalement, restant jour et nuit à son séant, et incline sur le cote gauche; s'il tentait de se mettre sur le côte droit, il etait aussitot pris d'étouffements. La figure etait bouffie et de couleur violette, les levres etaient livides, les jambes cedematées, le pouls vite, tres-faible et irregulier; il éprouvait des défaillances incomplètes mais fréquentes. On ne pouvait sentir les battements du cœur. La partie antérieure et gauche de la poitrine ne resonait pas du tout." Whilst the symptoms in this case, during life, differed remarkably from those presented in the one which I have narrated, yet the post-mortem appearances were very similar:—"A l'ouverture du cadavre on vit le pericarde tres-distendu, comprimant le poumon affaissé et endurci; cette membrane avait plus d'épaisseur que dans l'état naturel; sa cavité contenait environ quatre pintes, ou huit livres de serosite claire et verdâtre. La superficie du cœur paraissait avoir été le siege d'une inflammation chronique."*

The same author relates another case, in which considerable effusion existed. The symptoms, however, during life indicated serious disease of the heart. The same circumstance is to be noted regarding the cases recorded by Dr. Corrigan and others. The absence of these symptoms led me to make the erroneous diagnosis. There is one point, however, to which I did not give sufficient consideration, namely, the swelling at epigastrium. Several writers place great reliance on this symptom since the observations of Avenbrugger, who states, "*Scrobiculum cordis tumor occupat quem renitentia sua distingues facile a ventriculo flatibus turgente.*" This observation has been confirmed by other writers. The symptom, therefore, is worthy of great attention.

2d. The case is somewhat unique in regard to the extensive disease of mesenteric glands and ulceration of ilium, without the development of any symptoms during life indicative of the slightest amount of any such lesions; no emaciation, no purging, no pain, no pyrexia—circumstances which must suggest many useful reflections to the practical physician—none of greater moment than the great advantage of obtaining post-mortem examinations in every fatal case.

Treatment.—The extensive and chronic character of the case precluded the hope of much advantage from treatment. Had paracentesis been performed, little good would have resulted—the patient would have succumbed to the intestinal affection. Besides, the results of the operation in hydro-pericardium, upon the whole, have not been very satisfactory; had it been performed in this case, from the firm manner in which the pericardium adhered to thoracic walls, no good could have resulted. *Blistering.*—From the effects which followed the application of blisters in this and

* Essai sur les Maladies, &c., du Cœur, p. 34.

several other cases, I would be inclined to place some confidence in this remedy. Still, however, the influence could only be palliative.

Case XI.—Rheumatic Pericarditis, complicated with Pleuro-Pneumonia—Destructive Inflammation of left eye—Anasarca—Recovery.—J. C., aged 51, a labourer; admitted 27th March.—About a week previous to admission, was seized with severe rheumatic pains in large joints. These pains continued about four days, when he was attacked with a sharp pain in left side, after which the articular affection subsided, and is now almost gone. Face tumid, respiration difficult, and attended with pain at cardiac and lower left lateral regions. Expectoration profuse, tenacious, and rusty-coloured. Pulse 120, feeble. Percussion detected dulness over cardiac and lower lateral regions. On applying stethoscope, a complication of sounds was heard; friction sound combined with minute crepitation, submucous and sibilant rales. The vocal fremitus and resonance not much altered; at the lateral part of chest rather increased. The friction sound was peculiar. It attended both the act of inspiration and expiration, and also the action of the heart, being quite audible when the respiration was suspended. He had several previous attacks of rheumatism. *Two grains of calomel and one of opium every eight hours. Blister to left side of chest.*

Two days after admission, severe inflammation of left eye took place, involving, apparently, all the structures of the organ. The conjunctiva became rapidly ecchymosed, and pupil perfectly opaque. Leeches were freely applied to brow and eyelids without advantage. An ulcer appeared on the cornea on the second day, through which a light yellowish fluid exuded. On the seventh day after admission, his gums became tender, after which the condition of his chest began to improve. He was then ordered five grains of the iodide of potassium three times daily, and the blister to be repeated to left side of chest. With the exception of the eye, he steadily improved until the 20th, when general anasarca made its appearance. He was now ordered ten ounces of wine daily, and ten grains of the saccharine carbonate of iron three times a day. Under this treatment the anasarca quickly disappeared. He was dismissed on the 3d May, well in every respect, except the eye, which was severely injured, the pupil being much and irregularly contracted, and the whole organ retracted and diminished in volume.

Remarks.—The points of interest in this case are these:—1st, The sudden disappearance of the articular affection, after the thoracic organs became involved. 2d, The complicated nature of the disease of chest. 3d, The destruction of left eye.

I have only met with three cases in which this double complication of the lungs, pleura and pericardium, existed. It seems, however, that such instances are by no means uncommon. Dr.

Stokes, in his valuable work on Diseases of the Heart, mentions several cases. I beg to refer my readers to the work itself. They will find many excellent remarks regarding both the diagnosis and treatment.

With regard to diagnosis, the symptoms on which most reliance should be placed are—1st, The position of the dulness; and, 2dly, The modification of the friction sound.

1st. In pericardial effusions, the dulness is always detected anteriorly at first. In pleuritic effusions, the reverse. When the complication exists, the dulness can be detected anteriorly and posteriorly simultaneously.

2d. *The Friction Murmur*.—When this has merely a pericardial origin, it is heard only along with the action of the heart, having no relation to respiration; but when we have the friction sound attending the sounds of respiration, and also the same sound synchronous with the impulse of the heart, when respiration is suspended, we may conclude that both pleura and pericardium are inflamed. Again, if we have combined with such phenomena a fine crepitant rale, rusty-coloured expectoration, cough, no diminution, but rather an increase, of the vocal resonance, we may further conclude that the pulmonary tissue is also involved.

3d. *The destructive Inflammation of the left Eye*.—Corvisart considers this as one of the rarer symptoms of pericarditis. He relates a case in which the right eye was suddenly destroyed. In another instance, severe inflammatory action took place, and almost destroyed the organ. In my experience, I have met with another instance of severe and destructive inflammation of eye. I agree, however, with Dr. Stokes in thinking that this cannot, with propriety, be considered as essential to pericarditis, but that it depends on some typhoid condition of the system. The occurrence of anasarca confirms this view. Probably both may have resulted from *the absorption into the circulation of the effused matters*, a subject which merits more attention than what is generally bestowed on it. I think that there can be no doubt but that such absorption tends to deteriorate the blood for a time, inducing debility, cedema, and other secondary affections. It was in accordance with these views that I ordered the patient wine and iron. The result was very satisfactory.

Case XII.—Rheumatic Pericarditis—Extensive effusion into Pericardium—Treatment by mercury and blisters—Recovery.—J. M., aged 22; admitted March 28.—During the last few years has had several attacks of acute rheumatism. The present one, of ten days' duration, commenced with a shivering fit, which was followed by severe suffering in all the large joints, being the worst attack that he has ever had. The swelling and pains have now subsided, except in ankle-joints, which, however, are not severely affected. On examination of heart, a to-and-fro friction sound audible. Increased dulness on percussion over cardiac

region, at which he complains of acute pain. No difficulty of breathing. Pulse 100. He was ordered two grains of calomel and one-half grain of opium every six hours, and to have a blister applied over heart. The dulness, on percussion, continued to increase in extent, until it reached from the left second rib down to base of chest, and to the lower part of left lateral region; also across the lower portion of sternum to its right side, the dull portion presenting outline of a pyramid. When the patient was caused to lie on his right side, the dulness extended considerably to right of sternum. The friction sound was replaced by a soft, systolic, bellows murmur, heard at the seventh intercostal space, below and to the left of nipple. Fluctuation, or rather undulation, was observed at this point; indeed, there was a distinct protrusion between the ribs at each impulse of heart. The same undulatory movement was well marked at epigastrium. He did not suffer from dyspnoea, but became faint when he sat up. Pulse continued regular, and averaged about ninety-five. Eight days after admission, his gums exhibited marks of mercurial action. The drug was then suspended. Another blister was applied, and he had five grains iodide of potassium three times a day. From this time the dulness on percussion gradually diminished, and the murmur ceased. He was dismissed on the 20th April, without any abnormal symptoms detected, after a careful examination of heart.

Remarks.—The extensive effusion into pericardium is the chief point of interest in this case. Instances as severe have been recorded by Corrigan, Graves, and others. There could be no difficulty in the diagnosis. The to-and-fro friction sound—the extensive anterior dulness, of a pyramidal shape—the extension of dulness to the right side of sternum, when the patient was placed on his right side—the fluctuating or undulatory movement—the bellows murmur—were conclusive. In extensive effusion into pericardium, the late Dr. Hannay, of this city, was the first to point out the effect produced on the dulness by causing the patient to incline on his right side. It is a most useful proceeding. The pyramidal outline of the dulness is also of great moment. This was very well marked in Case X., of the present paper. Dr. Stokes has stated, that the liability to pericarditis is in direct proportion to the violence and duration of the fever, and that the disease of the heart is more closely related to the rheumatic fever than to the inflammation of the joints. This case amply justifies this opinion. Indeed, the same remark will apply to all the cases which were under observation. In several, the articular affection was exceedingly slight, but the febrile excitement in all both severe and protracted. Whilst in those cases of rheumatism in which no cardiac disease took place, though the joints were exceedingly painful and swollen, yet the febrile excitement was not severe, the pulse seldom rising above 90. Some of the other

cases which I intend to quote will fully illustrate the truth of these statements.

The treatment in this case was confined to blistering, mercury, and iodide of potassium. It will be seen that as soon as his gums became tender, improvement commenced. I have not any great amount of confidence in the iodide of potassium. I therefore ascribe the recovery chiefly to the mercury and blistering.

Case XIII.—Rheumatic Pericarditis—Effusion into pericardium—Peritonitis—Recovery.—J. W., aged 19; admitted Feb. 16.

—A week previously he was seized with a shivering fit, followed by pains in knee and elbow-joints, excessive perspirations; pains of joints at present very slight, and very little swelling. Complaints of pain in region of heart, with a feeling of uneasiness and some difficulty of breathing. Impulse of heart increased, and slight increase of normal extent of dulness detected on percussion. The stethoscope elicited a double friction sound attending the action of heart, heard loudest near apex. Pulse 120.

He was ordered two grains of calomel and a half grain of opium every eight hours. From the 19th till the 26th, the friction sound gradually ceased, and was quite inaudible at the latter date. The dulness on percussion as gradually increased, until it extended from the second rib down to eighth rib, and from the margin of the sternum, across the anterior region of chest, considerably to the left of nipple. On the 23d his gums became tender; the mercury was discontinued. He was then ordered four grains of the iodide of potassium three times a day, and a blister to cardiac region. He progressed favourably till the 28th, when, after a shivering fit, he was seized with severe pain at hypogastrium, increased on pressure; hot skin, thirst, quick pulse. Hot fomentations were applied to abdomen, and the mercury resumed internally. The blistered surface was dressed with strong mercurial ointment, and inguinal friction used three times a day. He was thus rapidly brought again under the influence of mercury, when all the symptoms subsided. The cardiac dulness had diminished to its normal extent on the 9th March. A soft systolic bellows murmur, however, was audible over base of heart. He was dismissed at his own request.

Remarks.—The only observation which I wish to make on this case is the occurrence of *peritonitis*. I wish to direct attention to this circumstance, as I have met with several similar instances, two of which occurred in the Infirmary. One, however, had no connection with rheumatism. The patient had chronic valvular disease and hypertrophy of heart. He was admitted with well-marked symptoms of inflammatory effusion into pericardium and abdomen. He got better under the use of mercury and blistering. His recovery, however, was very slow.

The other instance was complicated with *phthisis*, for which he sought admission. He was seized, however, with pain at epigas-

trium and shivering. On examination, the action of heart was found violent; a friction sound heard synchronous with its impulse. Pressure on abdomen caused much pain; febrile symptoms acute. Next day extensive dulness over cardiac region; friction sound nearly gone, and replaced by a loud systolic bellows murmur; Fluctuation detected in abdomen. The effusion both into abdomen and pericardium rapidly increased, and he died on the sixth day after seizure.

On inspection, the pericardium was found to contain nearly two pounds of reddish fluid, containing flocculent masses of lymph, the membrane itself roughened by lymph deposits. Abdomen contained several pints of red-coloured fluid, in which there was a quantity of lymph. His lungs were filled with a large number of cavities, of various sizes, from that of a marble to a pea, all more or less filled with solid fibrine and cretaceous matter, affording the best specimen I have ever seen of these pathological conditions; so much so, that sections of the lungs have been preserved in the pathological museum of the Infirmary.

The complication of pericarditis with phthisis is by no means rare, I believe much more frequent than is generally acknowledged. Louis, in his *Recherches Anat., &c., sur la Phthisis*, records a case in which pericarditis occurred near the end of patient's life. Dr. Law of Dublin has met with numerous cases of this combination. I refer the reader to the *Transactions of the Pathological Society of Dublin, 1841*. In all these cases the disease of the pericardium was detected by physical symptoms. My own experience is similar. In three other cases of phthisis, treated in the Infirmary, and inspected afterwards, the disease was recognised by percussion and auscultation, the patients only complaining of general uneasiness and increased difficulty of breathing. In two other instances, even these symptoms were so slight, that they failed to excite suspicion, and the disease was only detected on inspection. In these five instances, the pericardium did not contain a mere serous fluid, which might be ascribed to a non-inflammatory origin, resulting from the mere passive congestion that precedes death in chronic disease; but the fluid was of a reddish hue, and contained quantities of fibrine: the inside of sac and surface of heart being covered with white patches of the same substance. In several of the other phthisical patients, the disease was detected, and apparently relieved, if not cured; but as these patients left the hospital improved, I cannot speak with certainty regarding the termination of the disease. I am therefore inclined to consider that pericarditis is a very frequent complication of phthisis, but it generally presents itself in a latent form. My experience, therefore, confirms the opinion of Dr. Stokes, that "pericarditis, when combined with chronic disease of the lung, is generally latent."

I would, therefore, strongly recommend the frequent examina-

tion of the heart in cases of phthisis, especially in the latter stages of the disease, if the patient should complain of uneasiness about epigastrium, increase of fever, difficulty of breathing, palpitation. In my own experience, these are in general the symptoms which have attended the supervention of the complication. In a practical point of view, the early detection of the pericarditis is of great importance; much suffering may be prevented to the patient, and his life considerably prolonged. In the treatment of this complication, I have used blistering to the front of chest, I conceive, with great benefit. Even when the disease of lung is so far advanced as to preclude the possibility of any benefit from treatment, yet the detection of the pericarditis during life is more satisfactory than to be made aware of its existence after death.

General Remarks.—In concluding my observations on pericarditis, there are only two points to which I shall advert.

1st. The insidious manner in which the disease attacks rheumatic patients. It is often as latent as when it arises as a complication of phthisis. I have no doubt but that many serious mistakes have been made, in consequence of overlooking the important fact, *that the severity of the articular affection has no relation to the occurrence of pericarditis*—that it often takes place when the *pains are exceedingly slight*. The caution, therefore, cannot be too deeply impressed on the mind of the young practitioner, that he should carefully examine the heart at every visit, from the commencement till the termination of his attendance, in cases of rheumatic fever. He will often find the disease of the heart commencing simultaneously with that of the joints. I have found, in such cases, the articular pains slight, but the febrile symptoms acute. Cases occasionally are met with, in which the pericardial affection precedes the articular. I have seen two such instances during the past winter.

2d. *Treatment.*—At one time, pericarditis was very actively treated by bleeding. The result was not satisfactory. Led away by the opinions of Hope, and older writers on cardiac disease, at an earlier period of my life, I bled freely—I fear, I must confess, too freely. The result of such practice was not by any means favourable. I owe the change in my views to the perusal of the valuable clinical lectures of Dr. Latham. Since then my practice has been much more successful. I conceive that the profession is deeply indebted to Drs. Latham, Graves, Stokes, and others, for having, by their clinical researches, placed the treatment of this very serious and common disease upon a proper basis.

In robust constitutions, at the onset of the disease, much benefit will result from moderate local depletion, either by cupping or leeching. Our chief reliance, however, is to be placed on MERCURY. This, to be useful, must be given energetically. The patient should be brought under its influence as speedily as possible. I cannot impress my readers more forcibly with the neces-

sity of this practice, than by quoting from Dr. Graves on this subject. He observes—"If a person is seized with very acute pericarditis, how unavailing will be our best directed efforts, unless they be succeeded by a speedy mercurialization of the system! When even the most violent attacks of pericarditis are met with copious venesection, repeated leeching, and the rapid injection of calomel, few patients will be lost. If, on the contrary, the practitioner relies solely on the lancet—if in the beginning, as I have seen done, he applies a blister over the heart, and if he defers the exhibition of calomel, or *insufficiently uses it*—then will he have occasion to regret the consequences, and witness either the speedy death of his patient, or his condemnation to the sufferings entailed on him by adhesions, valvular disease, and the other sequelæ of badly-treated pericarditis."*

Blisters.—I conceive blistering to be a truly valuable remedy in the disease, especially when fluid effusion has taken place.

Iodide of Potassium.—I have not much confidence in this drug, but I deem it right to follow up the mercury by its exhibition. I confess I do this more on the consideration of the reputation which it enjoys with the profession, than from my own clinical experience of its utility.

I have not entered upon the consideration either of the cause of pericardial murmurs, or their differential diagnosis from valvular and other endocardial murmurs, my object, in the present article, being of a different character.

CASES OF CARDIAC DISEASE, COMPLICATED WITH ORGANIC AFFECTIONS OF OTHER ORGANS, AND DROPSY.

The high rate of mortality in the medical wards has been chiefly owing to this class. Out of fourteen cases, we had eleven deaths. The patients were admitted in a perfectly hopeless condition, the complications being of a very chronic character.

The cases may be divided into three classes.

First, Those in which acute *bronchitis* seemed to have been the first departure from health, the disease becoming chronic, and soon associated with emphysema; next, followed by dilatation of the cavities of the heart, especially those of right side; this, again, succeeded by venous congestion, and consequent structural changes in liver, kidneys, and skin, ending in *anasarca* and other dropsical effusions. In relation to the primary lesion, such cases may be designated as *Bronchitic*.

The second class originated in disease of the heart itself—sometimes its valves, at others the pericardium, often the sequelæ of rheumatism. Hypertrophy of the organ soon takes place. This is followed by dilatation; next by pulmonary, hepatic, and renal disease; and finally, general dropsy. In reference to their origin, these cases may be denominated *Cardiac*.

* Clin. Med., p. 803.

The third class originated in albuminuria, the cardiac and other complications being secondary. These cases may be called Renal.

These three classes of patients differed very little in their aspect when admitted. All had the same general symptoms, and, I am sorry to add, the same result; namely, death shortly after admission.

I consider, however, that it is of great practical importance to ascertain the primary origin of such cases, and to trace out the relations existing between the secondary complications. When the disease originates either in bronchitis or affections of the heart, so long as there exists no renal disease, hopes may be reasonably entertained that, by judicious management, we may be able to mitigate the patient's sufferings, and to delay a fatal termination. But when structural disease of the kidney takes place, all treatment, I am afraid, will be found unavailing.

In the April number of this journal, I have quoted a very striking example of the first class. The following case is also a good illustration:—

Case XIV.—Chronic Bronchitis—Emphysema—Dilatation of right ventricle—Systolic murmur—Enlargement of liver—Ascitis—Anasarca—Albuminous urine—Dismissed improved.

Mrs. S., aged 40; admitted 9th April.—Face tumid, lips livid; complains of great debility, cough, difficulty of breathing, general swelling of body and extremities. On examination, the chest is much rounded anteriorly, the intercostal spaces being nearly obliterated. A clear somewhat tympanitic sound, elicited by percussion. Auscultation detects loud, sonorous, and sibillant rales, and absence of vesicular murmur over the greater part of anterior aspect of chest. Mucous rales heard abundantly posteriorly. The heart detrudd; its apex felt pulsating in epigastrium. At this part a loud systolic bellows murmur was heard. It retained its intensity an inch up along the centre of sternum; but from this point it became fainter, and quite inaudible over any other part of cardiac region. No pulsation or distension of cervical veins. Abdomen much swollen; fluctuation readily detected. Liver much enlarged; pressure made over it caused pain. Urine slightly albuminous and of natural specific gravity. Pulse 90, feeble, but regular. She has been subject to a cough during many years. The swelling commenced in feet about three months ago; it gradually extended upwards, until it has become general. She was ordered to take, *three times a day, three grains of Dover's powder, combined with two scruples of cream of tartar, and ten grains of tartarized iron. To have a blister applied to region of liver. To have four ounces of wine daily.*

On the 21st she was dismissed, at her own request, considerably improved, the albumen having disappeared from urine.

Remarks.—In order to understand the principles which should guide us, both in mitigating the primary disease, and in prevent-

ing the secondary and tertiary lesions, we require to study the relation, not only as to time, but also as to cause and effect, which the various diseased conditions hold to each other. In the present paper I can merely glance at these important matters; on some future occasion I intend to enter more fully on their consideration.

1st. *Bronchitis*.—In this and similar cases, we find acute bronchitis has had the precedence. But in consequence either of incompleteness of the cure, or repetition of the attack, the mucous membrane of the bronchial tubes in all its component parts becomes diseased—thickened, denuded of its epithelium, and secreting an unhealthy mucus. In a very short time we have symptoms of *vesicular emphysema* presenting themselves. Various ingenious explanations have been given of the mode of production of this pathological state; but it appears to me that the changes which the diseased condition of the minute bronchial ramifications must produce, in destroying the elasticity of the air vesicles, affords a satisfactory explanation.

With regard to the third morbid condition, viz., *dilatation of the right side of the heart*, I cannot too strongly point out the great importance of understanding the causes on which it depends. Of all diseases of the heart, dilatation of its ventricles is most to be dreaded. We must never forget that the increase of dilatation, without corresponding hypertrophy, is always the signal of sad disaster to the patient; the balance of the circulating forces is irrevocably lost, and suffering and death the only prospects. I do not intend to pass in review the different explanations which have been given of the production of dilatation, but to direct attention to one or two circumstances connected with such cases as the present one, affording, in my opinion, a satisfactory explanation of the cardiac disease.

1st. We have the mucous membrane of the lungs destroyed.
2d. We have the air vesicles to a great extent dilated, and, consequently, incompetent to perform their functions. The blood becomes not only imperfectly aerated, but also impoverished. Its fibrine and albumen, improperly animalised, unfit to supply the muscular system with nourishment. The fibres of the heart must suffer in common; hence the dilatation of its cavities. The flabby pale condition of the muscles of such patients being too notorious to demand remark, I would, therefore, ascribe the morbid condition of the heart to the deteriorated state of the blood. I would not, however, maintain that dilatation always has this origin. It very frequently arises from totally different causes.

In the meantime, I do not intend to comment on the other organic lesions which exist in these cases, but beg to direct attention to the *systolic murmur* heard at the end of sternum. This murmur is of frequent occurrence in such patients. Indeed, I may state, that I have always been able to detect it, when the apex of the heart could be felt pulsating in the epigastrium. We

would infer, theoretically, that this murmur must depend either on regurgitation through the tricuspid, or obstruction at the right semilunar valves. If such were the origin of these sounds, we would expect to hear them loudest over the situation of these valves. This is not the case. The murmur is loudest at upper part of epigastrium, and lower part of sternum. But, on the other hand, we must not forget, that in all cardiac murmurs, the sound may not be heard loudest over the situation in which it originates, but at some distance. This arises from the relative sound-conducting properties of the parts placed between the heart and the ear of the auscultator. In this patient, as in all cases of emphysema, the heart is forced down, and its sounds are heard very indistinctly in their usual situation, in consequence of the intervening emphysematous lung. These two circumstances may explain why the murmur is heard at the end of sternum, at which there is a better conducting medium. On the other hand, the murmur may depend on the weakened condition of the heart, or abnormal directions of the currents of the blood. Practically speaking, the cause of its production is a matter of little moment. Our object here, as well as in all similar cases, is to determine the physical ability of the heart to carry on the circulation. The existence of the murmur I have described in such patients, may be taken as too certain evidence of the functional incapacity of the organ. Congestion of liver, kidneys, and general dropsy, if not present, will undoubtedly soon make their appearance.

Treatment.—When patients have reached the stage at which this woman had arrived, a very high authority has said, that life can only be prolonged by art about one year; I would add, not nearly so long, if the kidneys be involved. In this instance, I do not think that degeneration of these organs existed. The disappearance of the albumen from her urine, and its natural specific gravity, confirms this notion. We had another patient in the ward at the same time in a precisely similar condition, with the exception of the state of urine, which was of a low specific gravity, and contained almost constantly albumen. She soon sunk, and died. The condition of the urine, therefore, is of much importance, not only as regards prognosis, but also treatment.

In the management of such cases, we must always bear in mind, that whatever originally may have been the character or relations of the complicated lesions, *weakness* is the essential morbid condition within the scope of our resources. The proper indications, therefore, are—1st, To avoid everything that tends to debilitate. 2d, To use every effort to improve the powers of the heart and the assimilating functions—tonics, wine, iron, animal food, milk, &c. It is only by improving the condition of the blood that we can expect to be of much use. Therefore, besides a proper system of dietetics, we must attend to the condition of the excretory organs—the liver, kidneys, and skin. The congested condition of the

lungs also require great attention, and should be relieved as much as possible by blisters, sinapisms, and dry cupping. As regards the dropsy, I conceive the improvement of the general health to be the best diuretic we can use in such cases.

Case XV.—Hypertrophy and Dilatation of heart—Adherent pericardium—Bronchitis—Albuminous Urine—Anasarca—Death—Inspection.

J. B., aged 32 years; admitted March 3.—Ten years ago had an attack of rheumatic fever, but enjoyed good health till within the last few months. He now complained of a feeling of constriction and uneasiness in cardiac region. His lower extremities were much swollen, and some fluid existed in peritoneal sac. On examination of heart, augmented dulness was found to exist on percussion; impulse of heart irregular, action intermittent. A coarse diastolic bellows murmur was heard loudest at centre of sternum. Action of heart rendered very irregular and tumultuous on the slightest exertion, which also aggravated dyspnoea. Sonorous and sibilant rales heard abundantly over whole chest. Liver enlarged. Urine albuminous, and of low specific gravity, 1·08. *He was ordered a blister to chest, and to have, thrice daily, a wine-glassful of equal parts of the infusion of gentian and taraxacum.* No improvement taking place, on the third day after admission he was ordered *four ounces of gin daily.* The swelling continued to progress; the congestive condition of lungs became worse. His stimulants were increased, but without any benefit. He died on the 15th, having been only twelve days under treatment.

Post-Mortem.—Pericardium found adhering to heart at several points. Heart much enlarged, and both ventricles dilated, especially the right. The mitral and aortic valves covered to some extent by osseous deposits. Lungs much congested. Right pleural cavity contained a couple of English pints of a clear serous fluid. Several pints of the same liquid were contained in abdomen. Liver congested. Kidneys irregular in shape, somewhat smaller than natural, and partly in a state of granular degeneration. In the cortical substance there existed a large number of cysts, of different sizes, from that of a very minute point to that of a large marble.

Remarks.—This man presented us with a very good example of the form of dropsy denominated, in the loose phraseology of some writers, Cardiac; that is, effusion into serous cavities and the cellular membrane, associated with disease of the heart, as the primary lesion, often, as in this instance, originating from a rheumatic attack. There is no great difficulty in distinguishing cases of this nature from those of a bronchitic origin. In the cardiac we want the rounded form of the chest, the displacement of the heart downwards to epigastrium. On the other hand, in the bronchitic, we have the lips more livid; we have no murmur indicative of valvular disease, which generally exists in the other

cases. Then the history of the case affords us much facility in forming a diagnosis.

The diastolic murmur in this case, seems to have originated in the aortic valves, their imperfect condition permitting regurgitation. With regard to the diagnosis of adherent pericardium which existed, my experience forces me to state, that unless we have had a case under our observation from the commencement, we cannot diagnose this condition. The irregular, tumultuous, and jogging action of the heart, I have found the most commonly associated symptoms; but I have as often found adhesions after death, whilst during life no such irregular action of the organ existed.

The state of the Kidneys.—In almost all such cases we have these organs in a degenerated condition. This points out a close relation existing between the cardiac and renal disease, and leads to the conclusion that the latter results from the former. This is not difficult to explain. Though the renal veins are furnished with valves at their termination in the cava, yet if we have the circulation impeded in that vessel, which we always have in this class of cases, the circulation through the renal veins must become difficult, even though the valves should retain their competency. Hence we have venous congestion of the kidney, albuminous urine, impaired function, and ultimately fibrinous deposit and degeneration. This explanation, however, will not apply to every instance. In many the renal affection is a mere associated lesion, arising from imperfect nutrition of the system, induced by improper habits, acting on unhealthy constitutions. Hence we have such complications often in drunkards, in the strumous, and the badly fed. And it is also quite possible that the diseased heart, by its insufficient circulatory power, may so far interfere with the nutritive processes, as to induce a state of the system as favourable to the production of renal disorder as any of the other predisposing causes.

Considerable difference of opinion exists regarding the nature and origin of the cystic bodies which are found in the kidneys. Some maintain that they are produced by obstruction in the tubuli uriniferi, these subsequently dilate, in consequence of the retained secretion. Others consider that they originate as new formations within the tubes, each cyst arising from a nucleus which, under healthy conditions, might have produced an epithelial cell. I am inclined, from the examinations which I have made of these bodies, to adopt the latter opinion. The subject is one of great interest. Equally so is the occurrence of dropsy in these cases, as well as in those of a bronchitic and renal origin. The only remark which I shall make on this important practical matter is, that I firmly believe that the cause of dropsy in the three classes depends more on the diseased condition of the blood, than upon any of the structural lesions, except in so far as these organic changes are instrumental in deteriorating the blood. In

the renal class, probably both the structural lesions and the dropsical effusions all spring from the same common cause—viz., an abnormal condition of the blood. Let us for a moment reflect on the morbid lesions which existed in the cases I have quoted, dilated heart, chronic disease of the pulmonary mucous membrane, emphysema, degeneration of liver and kidneys—conditions which must assuredly lead to an altered condition of the blood—a state favourable to the transudation of its watery portions through the walls of the capillaries into the cellular tissue. It can neither be denied that we have the blood impoverished in these cases, nor that the variable density of the texture of the walls of the vessels will promote or restrain effusion. We may rest assured that there is something beyond the cardiac lesions necessary to induce dropsy. Even in cases of simple dilatation of the heart, associated with dropsical effusions, which we may conceive has followed passive congestion, or stagnation in the capillaries, in consequence of the diminished power of the heart, we must bear in mind, as Dr. Walshe very properly remarks, that this stagnation becoming constant may modify the qualities of the blood, and impair the nutrition of the walls of the vessels, and also the cellular tissue. Independent of this, even in uncomplicated cases of dilatation, a change in the blood may be effected meanwhile by other very effectual means—namely, pulmonary and renal congestion. In the present state of our knowledge, we are therefore justified in not ascribing the dropsy to diminished *vis a tergo*. It is a much more complex phenomenon. Our limits, however, will not permit further consideration of the subject.

Treatment.—I regret that I have no remark of any moment to make on this point. When the kidneys are much involved, any plan of treatment, I am afraid, will be found unavailing. Our aim should be to support the strength, improve the state of the blood, mitigate local congestions, without impairing the powers of the patient—act on the eliminative organs so far as their diminished capacities will permit, and prevent functional derangements passing into organic alterations.

The more interesting of the cases of cardiac disease originating during the course of albuminuria, will be noticed under this head. In the meantime, I may state, that in my own observations dilatation of the ventricles is the most frequent morbid condition—indeed, it may be viewed as the one essentially associated with renal disease—affording a further confirmation of the opinion entertained regarding the important relation which an impoverished condition of the blood holds to ventricular dilatation.

It is worthy of remark, that it is also dilatation which is connected as a secondary lesion with chronic bronchitis; there is this difference, however, that here we have the right side principally affected; but, in cases of a renal origin, both ventricles participate in the abnormal change. The condition of the lungs in the

bronchitic class will readily explain this dissimilarity, and remove any objection that might be urged against the views I have advocated, on the ground of difference in the effects resulting from the same cause—viz., an altered condition of the blood.

IV. *Notes on the Physiological and Therapeutic Effects of the Chloride of Ammonium.* By ALEXANDER LINDSAY, M.D.

It has been frequently remarked that our *Materia Medica* is sufficiently extended. Substances have doubtless been included amongst our medicines that perhaps ought not to have been accounted such. Yet it is as likely that many that have had a merely passing reputation—that have been named only to be left unheeded—may, nevertheless, not be so useless as their neglect would seem to indicate. How this should happen it is unnecessary to inquire. It is probable, however, that, in many cases, a lauded remedy is trusted, without, at the same time, attending to those general indications which an enlightened treatment would direct to be conjoined. This is no mere supposition; and thus it is that the therapeutic effect of even a useful medicine may be completely lost. In the treatment of chronic disease, the practitioner is often disappointed in the action of medicines, even with those that a large experience has shown to be useful. The causes that lead to this result are often difficult to discover. They may reside in the medicine; more frequently, however, they depend on peculiarities in the constitution of the patient. In such cases, a change of remedy is often attended with the happiest results, and hence the advantage of having at our command medicines whose actions are allied.

I have made these remarks preliminary to the urging on the notice of the profession an important medicinal agent, already included in our *Materia Medica*. I refer to the chloride of ammonium (NH_4), *muriate of ammonia*, or *sal ammoniac*, as it has been variously named. Internally it is seldom prescribed in British practice, although its external employment is not so rare. On the continent it is otherwise. In France, but particularly in Germany, writers on the *Materia Medica* inform us that its internal administration is frequent. The knowledge of this fact induced me, some years since, to give it a trial, and since then I have recommended it to the attention of others. My experience of its advantages, conjoined with that of those who acted on my suggestion, have prompted the endeavour to secure for it a more general trial.

Iodine, bromine, and chlorine are readily distinguished the one from the other; yet, in some respects, they are physically allied, and

they are so closely related chemically, that they have been grouped as a family. Further, there is a marked similarity as regards the therapeutic effect of the salts, resulting from their union with metals. These considerations, coupled with the assumed nature of the basyl ammonium, would naturally lead to the conclusion that the action of the chloride, in diseased states, would be of a character similar and equal to others held in higher repute; my own experience of the salt has shown such to be the case.

It may be useful to refer briefly to the physiological actions of the medicine under consideration. A knowledge of these cannot, it is true, serve as a guide to its employment in disease, yet it will enable us to measure its influence on the system, and to conclude in a general manner as to its therapeutic action. For where a physiological change in any given case is not observed, but little alteration is to be expected in morbid conditions.

The information possessed regarding the actions of the chloride on the healthy body is very limited. Pereira's *Elements of Materia Medica* contains all I have been able to glean on the subject. The statements there, however, refer to large doses; that author remarks as follows:—"Its local action is irritant. Its chemical influence is not very obvious. It dissolves mucus, but does not coagulate albumen. Weber tried the salt on himself. He took from ten to twenty grains for a dose, which he repeated at the end of an hour. The effects were a sensation of warmth and oppression in the stomach, headache, and increased desire of passing urine." So far as I am aware, the influence of medicinal doses, continued for a certain time in healthy individuals, has not been recorded. I was anxious to ascertain this, and have been aided in the inquiry by two intelligent pupils, who willingly agreed to subject themselves, along with me, to the action of the chloride. Daily, for a week previous to the experiment, the state of the appetite, the nature and amount of the food, the condition of the bowels, the frequency of the pulse, with the amount and density of the urinary secretion, were carefully noted. The medicine was then taken for a week, and similar observations recorded. The amount taken was in one case 18 grains per day, a second 13½ grains, and the third 9 grains. These quantities were divided into three equal doses, and were swallowed dissolved in two ounces of water. No comparison of the results was made till the observations were concluded. The following is a brief summary of these, from the notes now before me:—

On the second day after beginning the medicine, a buoyancy of the system was experienced that rendered ordinary pursuits a pleasure, and fitted body and mind for increased exertion. The uniformity of this result was the more remarkable as the experimenters represent types of the nervous, sanguineous, and lymphatic temperaments respectively. The feeling was least deve-

loped in the last. He employed the smallest dose. In all, the appetite was much improved. Where the smallest quantity of the salt was taken, the amount of food was doubled. The feculent discharges were in all much augmented. The mucous follicles of the intestinal tube seemed to be stimulated to a much increased secretion. In two, the force and frequency of the heart's action were diminished. The rate of the pulse in the gentleman employing the smallest dose was accelerated. In all, the chloride increased the urinary secretion. It cannot, however, be classed as a renal hydrogogue. The increase of fluid ranged from six to twelve ounces in the twenty-four hours. In the two cases, where the largest and smallest doses were used, it acted as a renal depurant, the excess of solids varying from 70 to 160 grains daily. In the other no change in this respect was noticed; but it may be necessary to remark, that the effect on the bowels appeared to be greatest in the individual making use of the medium dose.

The cases in which I have employed the chloride of ammonium in practice have been limited to chronic diseases, such as result from inflammatory action, or where there is a local ailment existing as the expression of a dyscrasial condition. Particularly, I have prescribed the salt in cases of chronic bronchitis, in enlargement of the lymphatic glands, whether resulting from scrofulous disease or dependent on a syphilitic taint, in chronic skin diseases, and in cases of chronic rheumatism.

The chloride has been, I may remark, exhibited also in acute diseases; in some forms of fever, and in the milder cases of pneumonia.* Further, Dr. Watson, in his lectures, has testified as to its efficacy in certain forms of facial neuralgia;† and Dr. Ebden, in the *Indian Annals of Medical Science* for April, 1854, states that it is a powerful and valuable remedy for the relief of neuralgic pain generally. He writes—"In facial neuralgia, tic douloureux, nervous headache and toothache, not excepting sciatica, and even in one case of neuralgic dysmenorrhœa, I have often given it, and been convinced, after a full trial, of its merits."‡

Of its therapeutic effects in acute diseases, I have no knowledge, nor have I prescribed it in neuralgic affections; but, from what I have seen of its physiological action in small doses, I can readily believe that the quantities prescribed by Dr. Ebden must have had an important influence.

I commenced the use of the salt in morbid conditions of the pulmonary mucous membrane, where the exuded (mucus) secretion was tough and tenacious. In such cases, its action was often remarkable, the exudate becoming speedily altered in quality and consistency. It has probably been from observing this

* Neligan on *Medicines and their Uses*, p. 359, 4th edition.

† Watson's *Lectures*, 3d edition, p. 717.

‡ Rankin's *Half-yearly Abstract*, vol. xx. p. 52, and *British and Foreign Medico-Chirurgical Review* for July, 1855, p. 236.

effect that some have attributed to the chloride of ammonium qualities similar to the mercurial preparations. As liquefacients their influence is well known. On this account they are frequently employed. But in cases in which their use is contra-indicated, as frequently happens in chronic bronchitis, I can confidently recommend that their place be supplied by the preparation under consideration, certain that if the case be well chosen, the benefit will soon be apparent, and equally certain that no prejudicial result will follow its employment. In this respect it differs from the alkalies or their carbonates, the prolonged employment of these disordering the digestive and assimilative functions, and ultimately producing a condition similar to scurvy, the nutrition of the body generally becoming impaired. It is very different with the chloride, its long-continued use never giving rise to symptoms of general cachexia. The testimony of many observers agree in this.

The efficiency of the ammonium salt, as a remedy in the cases noted, led me gradually to extend its use, and subsequent trials, frequently repeated, have shown that in cases of chronic rheumatism it often proves of great advantage. It is doubtless true we will be occasionally disappointed. This, however, happens often with our best remedies; but in those forms of rheumatic disease in which there is but little constitutional disturbance—those cases, in short, in which the iodide of potassium is found advantageous—the chloride may be given with every likelihood of benefit. In this affection, I have given the salt a very extended trial; but, in recommending its use, I need scarcely hint that it is not to be depended on to the exclusion of those secondary means—warmth, frictions, &c., that form a part of any treatment we may employ. I have also tried the chloride in periosteal inflammation of a chronic character, and having a syphilitic origin. Here its advantages are not so apparent, yet it seldom fails to give relief, and in cases where the iodide of potassium had ceased to exert any apparent influence on the disease, the substitution of the chloride has been followed by a rapid cure.

In enlargement of the lymphatic glands, I have not had such an experience of the use of the chloride as enables me to speak with confidence of its action. Yet more or less benefit will follow its prolonged employment. In that variety of bubo aptly designated Indolent, which so often exhausts all ordinary remedies, and frequently our patience, the use of the chloride often speedily effects its removal. I am in the habit here of applying it also externally. A strong solution being employed (℥i. to the ℥i.), lint is soaked in this, applied to the swollen surface, and covered with oiled silk. In such cases, the general treatment must not be forgotten. The state of the bowels must be watched, and, if need be, corrected, the diet employed being nutritious. Carefully-applied pressure over the swelling is also a valuable auxiliary.

In another point of view, the chloride of ammonium has an advantage. It is cheap. This precludes the likelihood of intentional adulteration. Sometimes it is impregnated with iron, and, it is said, occasionally with lead. As regards the former, when present, it exists in such small quantity that it can in no way interfere with its action; and as regards the latter, any samples I have tested showed no evidence of its presence.

By writers on the *Materia Medica*, the dose of the chloride is stated to be from 5 to 30 grains. The quantity prescribed by me has varied from 5 to 10 grains, three or four times a day. Dr. Ebden, in the paper already noticed, states he employs from 25 to 35 grains in neuralgic affections, repeated at short intervals. I have never given the salt in such doses. His experience, however, accords with my own as to the effect on the system of the quantities I am in the habit of administering. This agreement was to me the more gratifying, as I was not aware of the existence of his paper till these remarks were nearly completed, and it adds to the confidence I have in urging the medicine on professional attention.

The chloride of ammonium may be administered in simple or medicated waters. Where there is evidence of febrile disturbance, small doses of emetic tartar may be advantageously added. I frequently prescribe it with some bitter infusion, as quassia, cascarilla, gentian, &c. In cases where an anodyne may be necessary, the solution of the muriate of morphia may be conjoined in appropriate doses. It need scarcely be added, that the alkalies with their carbonates, as also the nitric and sulphuric acids, are incompatible.

The preceding observations have been limited to a mere narrative of observed results. Any endeavour to explain the nature of the influence exercised by the chloride over the organism has been carefully avoided. To judge of the action or effect of a medicine is always sufficiently difficult, without attempting to accomplish more. Even where the mind is least biassed, the accidental is often apt to be confounded with the essential, and antecedents linked with results with which they may be but very remotely related. This is not to be wondered at when we think on the very varied influences that combine to modify disease, and, as a necessary sequence, the actions of those agents we employ for its removal. Of disease we know nothing other than what is made known by symptoms and observed structural change, and of medicines only so much as they alter or modify these. Frequently the mind is not content with this, seeking to penetrate further, leaving the true field of observation, and attempting to grasp at what is placed far beyond mental reach. Thus it is that the science of therapeutics has not advanced with that steady onward step which has marked the progress of other departments of knowledge. The properties of matter are studied,

the circumstances that modify these observed, and the information so acquired is applied to the purposes of life. The day is past in which it was sought to elicit its ultimate nature or essence. So ought it to be with medicines. Their actions, and the circumstances that modify these, should alone be investigated. The therapeutic power of the mercurial compounds is acknowledged, and every day applied in the treatment of disease; yet how little, how very little, of useful knowledge is to be gleaned by the study of the various hypotheses that have been offered to explain their action.

These remarks may be considered by some foreign to the subject of this paper. They will, however, serve to show why I have not thought fit to attempt to explain the *modus operandi* of the chloride. Of this I know nothing. I have seen its beneficial employment, and presume to think that when in more general use, it will be assigned a position amongst our more valuable alterative, resolvent, and liquefacient remedies.

The following cases are appended in illustration of the effects of the salt. Numerous others might easily have been added:—

Jan. 25, 1855.—*J. W., hawker, aged 45.*—Has suffered from winter cough for many years. Four days ago was much exposed to wet, and has since been unable to leave bed. When seen, skin hot, tongue furred, urine scanty, and bowels constipated. Pulse 120. Severe cough; scanty expectoration, and complains much of a feeling of constriction of chest. The stethoscope afforded the physical signs usual in bronchitis. Ordered him to be purged, afterwards to have *tart. antimon. et potassæ*, in nauseating doses, and a mustard poultice to chest.

Feb. 2d.—Feverish symptoms gone. Cough still very severe. Complains of great difficulty of getting up the expectoration, which is so tenacious that he has to withdraw it from the mouth by the fingers. Ordered a teaspoonful of the following mixture, four times a day, in water:—

<i>R Chloridii Ammonii,</i>	<i>℥ij.</i>
<i>Sol. Mur. Morph.,</i>	<i>℥iiss.</i>
<i>Syr. Simplicis,</i>	<i>℥vj.</i>
<i>Aq. Puræ,</i>	<i>℥iv. Solve.</i>

Within twenty-four hours a marked improvement began, which continued till the expectoration acquired an almost watery consistency. Ten days after he was in his ordinary health.

August 15, 1855.—*Mrs. G., aged 66.*—Has been complaining of cough for some weeks, with slight difficulty of breathing. Is able to move about for the greater part of the day, but complains of weakness and pain, referred to anterior and lower part of chest. Pulse 70. Expectoration scanty and tenacious. Bowels had been freely purged before I saw her. Dry mucous rales

heard over upper part of chest. Ordered the foregoing mixture, without the solution of the muriate of morphia.

27th.—Has still a little cough. Sputa come up freely. Is gaining strength. Has now no pain in chest, and the appetite is much improved.

July 1, 1855.—Mrs. —, married, and has had four children. Contracted syphilis, six months ago, from her husband. Was mercurialised at that time by a surgeon in the country, and used afterwards, so far as I could learn, iodide of potass. She came under my care suffering from constitutional disease, manifesting itself on the skin, with sore throat and severe pains in the limbs. Her appearance was extremely unhealthy. Appetite nearly gone. Bowels disordered.

After touching the throat with the nitrate of silver, and attending to the bowels, she was ordered to sponge the body, night and morning, with a tepid saturated solution of common salt, and to have a tea-spoonful of the following mixture three times a-day:—

R <i>Chloridii Ammonii</i> ,.....	ʒiiss.
<i>Acid. Hydro-Chlor.</i> , dil.,.....	ʒiiss.
<i>Aq. Puræ</i> ,.....	ʒivss. Solve.

Shortly after beginning the medicine she began to improve, and at the end of four weeks all the symptoms had nearly disappeared.

V. On *Dislocation of the Thumb.* By WILLIAM WEIR, M.D.

ALTHOUGH luxation of such a small member of the body as the thumb may perhaps be considered, by some young surgeons, a very trifling affair, and one easy of reduction compared with that of the shoulder or the hip, yet men of experience, and most surgeons of long standing—I may indeed say, all surgeons who have seen many cases of the accident—will admit that it is one of the most difficult to reduce of all the species of dislocation that we meet with in practice. The most experienced surgeons have confessed that they have sometimes been baffled altogether in cases of this kind, and have failed in their attempts to replace a dislocated thumb; and much difference of opinion still exists among the members of the profession as to the cause of this difficulty, and as to the best mode of proceeding in cases of this accident.

It has been said, indeed it is stated in some surgical works, that if the accident be recent, the reduction is easily enough managed, and that it is only in cases where the bones have been displaced for some days that any great difficulty is experienced in effecting the reduction. I am inclined to believe that both in recent and old cases, the surgeon will find it no easy matter to replace the bones.

The following case occurred to me many years ago, and the relation of it, with a brief allusion to some others published by various authors, will, I think, show the correctness of this statement:—

A very delicate lady, aged about twenty, stumbled in ascending a stair, and, falling upon her hand, dislocated the first joint of the right thumb. I saw her within ten minutes after the accident. The metacarpal bone was forced downwards towards the palm, its distal extremity being felt projecting at the ball of the thumb, and the proximal end of the first phalanx was resting upon the upper surface of the metacarpal bone. The second joint was semi-bent, the thumb projected upwards, and could not be brought into apposition with the fore-finger. Flexion of this joint could be produced to a slight degree by another person, but with some pain. The luxated joint was immovable, except when considerable extension was made, when it could be bent a little. There was no abrasion of the skin, no swelling, nor any appearance as if the hand had received a severe injury. The patient said it was not painful, unless when handled roughly. After I had made some slight attempts at reduction without effect, I was joined by another surgeon. We fixed a ligature, by means of what is called a *clove hitch*, above the second joint, that is, on the first phalanx, and made gradual extension; while this was kept up for a long time, counter-extension being made by an assistant, I endeavoured to press the phalanx downwards and the metacarpal bone upwards, so as to get them into their natural position, but without effect. There was no doubt that the extension was sufficient, and that the extremity of the phalanx was drawn effectually from the surface of the metacarpal bone; but, apparently from the extending force having the effect of bringing and keeping the ligaments or the tendons of the muscles very close together, the heads of the bones could not pass between them, so as to admit of the reduction of the luxation. We made another attempt, by extending the thumb in the same way, and when the extension was complete, I suddenly flexed the joint until the point of the thumb was actually made to touch the palm of the hand, but the joint remained as before. The ligature was then made firm upon the metacarpal bone above the luxated joint, and the thumb was kept semi-bent (for this could now be done), while extension was made as before, but with no better success.

The integuments were a good deal bruised and injured by these ineffectual attempts at reduction, which were continued for nearly an hour, and considerable swelling and inflammation supervened, which required the application of leeches and cold lotion for their removal.

Ten days after the accident, when the swelling and inflammation had subsided, another attempt at reduction was made. I had then the assistance of three experienced surgeons. The same

means were again tried for nearly an hour, having previously produced nausea and depression by the *vinum antimonii*, but still without success. The joint remained unreduced.

Some weeks afterwards, this young lady was prevailed upon to go to Manchester, and place herself under the care of a quack bone-setter there, who had acquired great celebrity in the management of difficult cases of fracture and luxation. This man made several attempts to reduce the joint, using for counter-extension a small smooth cylinder of iron, placed between the thumb and finger, and held firmly by an assistant, while he made very violent efforts with his hands, and by means of ligatures applied round the thumb, in order to accomplish his purpose, but without effect. I understood he used no other means than extension. Very severe inflammation and suppuration were the results, which extended over the whole hand, and partly up the fore-arm. I think one or two incisions were made for the discharge of matter. After remaining a couple of months under this man's care, the patient returned to Glasgow with her thumb as before.

Ten years after the accident, the following was the state of the thumb and joint:—"There remains considerable deformity of the hand. The extremity of the phalanx is now fixed on the upper and inner side of the metacarpal bone. She has recovered great power of motion in the joint. She can use the thumb in sewing and other domestic matters, can shuffle and deal the cards easily, and can play upon the pianoforte nearly as well as before the accident."

Dislocation of the first joint of the thumb, where the phalanx is situated on the palmar or inferior surface of the metacarpal bone, sometimes happens, and is usually easily reduced. The case I have detailed is of a very different nature, the end of the phalanx being placed on the superior surface of the bone, while the metacarpus projects on the palmar surface; and this accident most recent surgical authors speak of as one extremely difficult to reduce. Considering the comparative rarity of the accident, I do not believe that there is any other dislocation, of which there are so many instances of unsuccessful practice on record, as of the one in question. Mr. Hey mentions an unsuccessful case, which occurred at St. George's Hospital, in the year 1758, and another, in which he himself failed, in 1767.* He also quotes Mr. Bromfield as stating that he knew of a case, in which the extension was carried to such a degree that the surgeon tore off the thumb from the hand.† Mr. Hey likewise mentions two cases which occurred to a Mr. Evans, in neither of which could reduction be accomplished, until the joint was opened and the ends of the bones removed with the saw. Dessault also alludes to an unsuccessful case, in which he recommended an incision to be made behind the

* Hey's Practical Observations in Surgery, p. 327.

† Hey's Surgery, p. 330.

end of the bone, and a spatula, or some such instrument, introduced to effect the reduction; but whether this advice was followed is not stated.*

A case is related as having occurred at the London Hospital some years ago, in which, as usual, reduction was found very difficult to accomplish. It was one of compound dislocation of the first phalanx of the right thumb. On its palmar aspect there was a wound one inch and a half in extent, through which the extremity of the metacarpal bone protruded, the first phalanx being situated on the dorsal surface. An attempt at reduction in the usual manner was unsuccessful. The author says—"A more careful examination was then instituted, and the tendon of the long flexor was found to have been carried backwards with the phalanges, and become firmly fixed between the extremities of the bones, and to their ulnar side. It could not be removed from its new situation without division." The tendon was accordingly divided, and the reduction was then easily accomplished. It is stated that the wound healed by granulation, and the man left the hospital, "having a very useful thumb," but with only a "tolerable amount of power of flexion and extension."†

I have no doubt that many more such cases, where the reduction was not accomplished, might be found in the records of surgery. These are sufficient to prove that the dislocation is one peculiarly difficult to manage.

What is the cause of the great difficulty which attends this accident? On this point there is considerable difference of opinion. Boyer refers it to the little space there is for counter-extension, and also in part to the resistance made by the strong muscles around the joint. Mr. Hey gives a very ingenious solution of the cause of the difficulty. He says—"A transverse section of the inferior extremity of the metacarpal bone of the thumb exhibits the form of a wedge, the narrowest part being towards the palm of the hand. There are two tubercles on each side, whence the lateral ligaments go off to the first phalanx of the thumb. Upon measuring the distance of these tubercles from each other, I have found the two which are nearest the palm of the hand to be only three-eighths of an inch from each other, whereas those on the posterior (upper?) part of the same bone were at the distance of five-eighths of an inch. Supposing, therefore, the head of the bone to be pressed forcibly between the lateral ligaments towards the palm of the hand, the extremity of the metacarpal bone passes like a wedge between the lateral ligaments, and having passed through between them, it cannot return, as the posterior (superior?) broad part of the bone presents itself to the more contracted aperture between the ligaments." He says further upon this subject—"From an anatomical examination of the structure of this joint,

* Hey's Surgery, p. 330.

† Lancet, vol. i. for 1846, p. 344.

it seems impossible that the metacarpal bone should pass in this direction to a complete dislocation without tearing off some of the lateral ligaments; yet so much may remain as to prevent the return of the bone to its natural situation."* If this idea be correct, it appears plain to demonstration, that in such a case the more we extend the thumb, particularly in the straight direction, the more closely will the lateral ligaments be brought together, and the narrower will be the opening through which the bone must pass in the accomplishment of the reduction. This was very distinctly seen in the case I have related, for the extension was very complete, and the joint could be freely moved, but the ends of the bones could not be brought into perfect apposition, I presume because they could not be passed between the lateral ligaments.

Sir Charles Bell, in his *Operative Surgery*, takes nearly the same view of the subject as Mr. Hey. He says—"We find that in the attempt to reduce the first joint of the thumb, the second phalanx has been torn off. This should convince us that the difficulty proceeds from the ligaments, for the muscles of the thumb could not bear such a degree of violence. When we have recourse to anatomy, we find that the bones are united by a proper hinge joint, that there are strong lateral ligaments, and that the articulating heads of the bones are square, and have somewhat of a wedge form." He then alludes to Mr. Hey's opinion, quoted above, and continues—"I should have expected that Mr. Hey would have followed these observations with the rule of practice, viz., that we must bend the thumb at the dislocated joint, so as to carry the head of the bone which is dislocated in a semicircular movement round the head of the metacarpal bone, in order to bring it through the two lateral ligaments."† I have already said that this was attended to in the case I have related, for the thumb was bent until its point touched the middle of the palm of the hand, but without success.

Sir Charles Bell accordingly recommends the thumb to be bent while extension is made, so as to cause the head of the bone to move in exactly the reverse direction of its motion when being dislocated. He shows that mere extension will bring the lateral ligaments still closer together, and so lock the head of the bone more completely. If this principle be attended to, he thinks that the dislocated thumb may always be reduced; but if not, he recommends that a couching needle should be introduced under the skin, and one of the lateral ligaments cut, which would at once free the head of the bone, and reduce the joint.‡

The relator of the case, which occurred at the London Hospital, quoted above, takes a different view of the subject, and attributes

* Hey's *Surgery*, p. 325.

† C. Bell's *Operative Surgery*, vol. ii. p. 259.

‡ Bell's *Surgery*, vol. ii. p. 261.

all the difficulty to the tendon of the long flexor muscle getting between the ends of the two bones. In his remarks appended to the case, he says—"It is evident that so long as this tendon remained between the extremities of the bones, reduction could never have been effected, either by pulleys, or division of the lateral ligaments, as recommended by some surgeons. In many cases which baffle the skill of surgeons, it is probable that this displacement of the tendon is the cause of the failure. In a case which occurred at this hospital, division of the lateral ligaments was made for this same accident, and no power appeared capable of returning the bones to their proper position even then. If the tendon does not stir from the median line of the thumb, of course it ought to form a prominent band over the extremity of the metacarpal bone, and be easily seen on examination. A case of this kind occurred at this hospital a few weeks ago, and was reduced easily by extension only."* I rather think that the circumstance of the long flexor tendon getting between the ends of the bones, mentioned as having occurred in this case, does not invariably or necessarily happen. When it does, it will, no doubt, add to the difficulty of the reduction.

Dr. Hunter, of the Andersonian University, had a subject brought into his dissecting room, some years ago, with an unreduced dislocation of the thumb, an account of the examination and dissection of which was published by Dr. Lawrie in the *Medical Gazette* for 1838-9, vol. i. p. 96. It is mentioned in that paper that Sir Astley Cooper stated to Dr. Lawrie verbally, that the cause of the difficulty in effecting reduction in this species of dislocation is the sesamoid bones.

Sir Astley Cooper, in his large work, does not treat of dislocation of the thumb separate from that of the fingers. He says—"The dislocation can be reduced by making extension with a slight inclination forwards, to relax the flexor muscles. If the bone has not been dislocated many hours, it is easily reduced; but if neglected at first, it can only be effected by a long-continued extension very steadily applied." I am quite satisfied, however, notwithstanding this high authority, that no amount of extension alone could ever have reduced the dislocation in the case related, whatever may have been the cause of the difficulty. The ends of the bones were sufficiently separated from each other, and the joint made quite moveable, and yet they could not be brought into their natural position. Sir Astley further remarks—"I have seen too much mischief arise from injury to the tendons and ligaments of these joints ever to recommend (as has been advised) their division, to facilitate reduction, when extension will not succeed."†

Mr. Liston, when speaking of this accident, says—"The re-

* *Lancet*, vol. i. for 1846, p. 344.

† Cooper on Fractures and Dislocations, p. 523.

duction of luxation of the proximal phalanx of the thumb, on the posterior aspect of the metacarpal bone, has occasionally been found puzzling enough, and it is never accomplished without some little trouble. This difficulty has been attributed to the action of the short flexor, and to the tight embrace of the lateral ligament around the neck of the bone. By making extension across the palm of the hand, the one obstacle is done away with, but the strength and rigidity of the ligaments are not, in general, easily overcome. Before the reduction has been effected, it has been found necessary to divide one of the ligaments. The external is most easily reached and divided by the introduction of a narrow-bladed knife through the skin at some distance, and by directing its edge against the resisting part.* He then alludes to the case of an old man, in which it was found absolutely necessary to perform this operation before the reduction could be accomplished; and also to another, a lad, aged 15, who was admitted into the Edinburgh Royal Infirmary, with luxation of this joint of nearly 14 days' duration. In this case, it was impossible to effect the replacement until the ligament had been divided. He returned within a week, having again fallen, and displaced the bones. The reduction, on the second occasion, was made readily enough.*

Bransby Cooper, in his *Lectures on Surgery*, says very little about this species of dislocation, although he dwells at some length on dislocation of the metacarpal bone (which he calls the first phalanx), from the os trapezium, a very rare accident; and also on luxation of the last phalanx, the distal.†

A writer in the *American Journal* says—"In this dislocation, the phalangeal end of the metacarpus projects into the palmar surface of the hand, forcing itself between and through the flexor muscles of the thumb, which form a loop over the head of the bone. Extension made upon the thumb makes this loop more tense; and as the metacarpal end of the first phalanx is broad and considerably flattened on its palmar aspect, it must be apparent at once, that the difficulty of reduction is directly as the amount of the extension. There is good reason to believe that extension would never succeed in this case without rotation. The principal indication of treatment here, is to relax the flexors forming the loop, so that the end of the phalanx can be pushed forward into the loop, and by carrying the muscles forward with it, disengage the head of the metacarpus."‡

In the *Lancet* for 1850, a Dr. Uhde of Brunswick relates two cases of this dislocation. The first, a man aged 38, struck the palmar aspect of the left thumb against a beam as he was falling from a ladder. An hour after, "the first phalanx was so

* Liston's *Practical Surgery*, p. 112.

† Cooper's *Lectures on Surgery*, pp. 351, 352.

‡ *American Journal of the Medical Sciences*, April, 1853, p. 401.

placed as to form a right angle with the metacarpal bone, while the second phalanx was slightly flexed. . . . The wrist being fixed by an assistant, extension from the first phalanx was kept up for half an hour, but without success. Dr. Uhde then placed the radial borders of his forefingers upon the head of the metacarpal bone, and both his thumbs on the upper end of the first phalanx, pressing the former bone upwards, and the latter downwards. The dislocation was instantly reduced, and within ten days the patient resumed his occupation as a mason." The second case was that of a boy, aged 15, who, "in falling from a height of several feet, struck the dorsal surface of the first phalanx of the right thumb, which was doubled into the palm, and the palmar surface of the fingers against the ground. An hour and a half after the accident, there was great swelling; the tendon of the extensor pollicis formed a marked prominence along the dorsal aspect of the metacarpal bone, bounded by a little pit on either side; the first phalanx was bent backwards at an obtuse angle, the second slightly flexed, and the head of the metacarpal bone projected into the palm. A similar mode of reduction replaced the dislocated bone in a few seconds."* This appears to me to be simply the mode by pressure and slight extension, which would obviously occur to every one when first attempting reduction in such a case. I should suppose it would be tried by every surgeon, previously to having recourse to more violent measures. It was what I did again and again in the case related, but without effect.

Dr. Uhde made experiments on the dead body, in regard to this species of dislocation. "He dislocated the thumbs of ten subjects, by bending back the first phalanx. In seventeen cases, the parts were easily replaced by extension, by pressure, or by flexion of the dislocated joint. Dissection gave the following results:—Splitting of the flexor brevis pollicis; exposure of the head of the metacarpal bone; rupture of the forepart of the capsular ligaments; the sesamoid bones lying on the projecting edge of the dorsal surface of the metacarpal bone; only in a few instances had the flexor of the longus pollicis slipped inwards. Three dislocations remained irreducible. In two of these, beside the foregoing appearances, the internal lateral ligament was torn through, and the sesamoid bones lay between the projecting border of the metacarpal bone and the first phalanx. In the third case, the appearances were the same, except that the external lateral ligament had given way, instead of the internal; and the inner sesamoid bone, separated from the outer, lay internal to the head of the metacarpal bone. All the surrounding parts, with the exception of the ligaments and sesamoid bones, were then removed from the three irreducible dislocations, and extension was made, but without reducing the dislocation, which, however, yielded at

* Lancet for 1850, vol. i., p. 54.

once to the proceeding above described, as having been successful in the living subject. The three joints were again dislocated, and the uninjured lateral ligament divided, when simple extension sufficed to replace the bones in their natural position.”*

I observe a case, in a late number of the Association Journal, quoted from the American Journal of Medical Sciences for July, 1854, denominated “dislocation of the thumb forwards.” It is described thus:—“The thumb was shortened and strongly extended, so that the second joint was brought near the metacarpal bone, and projected obliquely upwards. The head of the bone could be felt in the ball of the thumb in front, and a little to the outside of the metacarpal bone; the bones of the thumb were hence placed a little obliquely with regard to the metacarpal bone. The second phalanx of the thumb was flexed upon the first. The patient having been etherised, reduction was easily effected by extension, with a slight rotatory motion.”†

This is evidently a case very different from those to which I have been alluding. The phalanx was situated below, or on the palmar aspect of the metacarpal bone, and not on its superior surface, an accident which I have already said will usually be found easy of reduction. The writer says, “The head of the bone,” that is, the phalanx, “could be felt in the ball of the thumb in front, and a little to the outside of the metacarpal bone;” and at the end of the case he adds: “Nelaton, in his *Elémens de Pathologie Chirurgicale*, tom. ii., p. 422, states, that but three examples of this form of dislocation are on record, to which he adds a fourth.” It is obvious, therefore, that this case was of a different nature from those in which the reduction is usually so very difficult to accomplish.

A few weeks ago, while I was officiating at the dispensary of the Royal Infirmary, a well-marked case of the accident which I have been describing occurred. The patient was a middle-aged woman, and I think the joint had been dislocated about a week. Knowing the difficulty of reduction, I sent her to the accident ward, and she became a patient of Dr. Hunter’s. I was informed that two attempts were made, in the usual way, to reduce the luxation; but although persevered in for a long time, they were unsuccessful, and the woman was dismissed unrelieved.

It may be worth mentioning, in conclusion, that certain individuals have had the power of dislocating the thumb at pleasure; but this appears always to be that kind of case in which the phalanx is placed on the lower or palmar aspect of the metacarpal bone. Mr. Cooper quotes Mr. Dunn, as speaking of a young man who “can spontaneously dislocate the thumb of his left hand at the metacarpal joint, by the action of the flexor muscles alone, the *metacarpal bone being the upper*. By the action of the extensors

* Lancet for 1850, vol. i., pp. 54, 55.

† Association Medical Journal for 22d June, 1855, p. 591.

he can replace it, but the least extension of the thumb, by an assistant or himself, gives him great pain, *without accomplishing the reduction*. He can by the same means dislocate the second phalanx of the thumb from the first. He complains of no weakness in his hand, and, indeed, can exercise the left hand better than the right.*

It would appear, then, there are at least four different explanations given by authors of the cause of the difficulty experienced in reducing dislocation of the first joint of the thumb:—1. The lateral ligaments tightening the space through which the ends of the bones must pass. 2. The tendon of the long flexor muscle getting in between the ends of the bones. 3. The end of the metacarpus forcing itself through the flexor muscles, which form a loop over the head of the bone. And, 4, the sesamoid bones lying on the edge of the dislocated bones, and so preventing them returning into their natural position.

VI. *Case of Fracture of the Frontal Bone, with extensive Displacement of the Bones of the Face, and Injury of the Brain.* By JAMES DICKSON, Esq., Surgeon, Bailieston.

J. N——, a collier, while being rapidly drawn up a coal-pit, struck his head violently on the edge of an iron bar. By the stroke, the soft parts and bone were torn off over an extent of four or five inches, above and including supra-orbital ridge of right side, bridge of nose, and malar bones, laying bare dura mater to a similar extent, wounding brain, and exposing optic nerves at their bifurcation, and also the superior aspect of right eyeball. The malar and superior maxillary bones were likewise loosened and displaced.

On examination, immediately after the accident, the exposed dura mater was found to be torn to the extent of at least an inch, through which opening the finger passed freely, as several pieces of bone, which were driven into the substance of the brain, had to be extracted. There was also an escape of cerebral matter at the time of the accident to the amount of at least a teaspoonful. Neither of the eyeballs were injured, nor were the eyebrows torn away on either side. Certainly the most remarkable circumstance in the case was the exposure of the optic nerves, behind the orbits, and diverging from their commissure. This seemed to be the result of the anterior lobes of the brain being raised up by the fractured orbitary plate of the frontal.

He was somewhat stunned by the blow, but soon became conscious, and next day his intellect was entire, his pulse natural, and he was nearly free from pain.

* Cooper's First Lines, vol. ii., p. 471.

It was agreed to apply water dressings to the wound, and combat symptoms as they arose, it being thought impossible that he could recover from such a severe injury. However, little disturbance of the general health resulted. The wound slowly contracted, and at last closed up; but cicatrisation was never complete, as there always remained an opening in the middle of the forehead, through which issued a muco-purulent discharge, which opening communicated with the nostrils. During the process of suppuration, while the wound was healing, small portions of bone came away, not from exfoliation, but apparently pieces which had been broken off and detached at the time of the accident.

The sense of smell was subsequently found to be totally lost. Hearing was also considerably impaired from the time of the accident, and continued so during lifetime. Vision was good in both eyes for a day or two after the injury, but was then lost in left eye for several weeks. It gradually returned, however, and was ultimately quite restored.

With the exception of rare attacks of cerebral congestion, this man's general health continued good for ten years. He begat several children during this time, and ultimately died, as is supposed, from some cerebral disease; but I did not attend him in his last illness.

Description of the Skull by WILLIAM MACKENZIE, M.D., Glasgow.

The skull, that of a male, and from the sound condition of the teeth, seemingly that of a middle-aged person, macerated and cleaned, presents the following appearances:—

1. On placing it in the position called *norma verticalis*, the face is seen to be twisted from the right towards the left side, while the left zygoma is bent out into an angle, and projects about $\frac{1}{4}$ inch more from the side of the head than it ought to do.

2. Viewed in front, the skull presents a fracture and loss of bony substance, extending obliquely across the forehead and upper part of the face, from the left external angular process, through the frontal sinuses and the ethmoid, to about $1\frac{1}{4}$ inch above the right external angular process of the frontal, leaving an irregularly oblong deficiency of the frontal, measuring $2\frac{3}{4}$ inches in its transverse, and from $\frac{3}{4}$ inch to $1\frac{1}{2}$ inch in its vertical diameter. The supra-orbital ridge on each side has been fractured; the left is deficient, and the internal angular process is depressed; the right internal process is twisted downwards and outwards, so as to intrude on the outline of the orbit. From a dislocation of its component bones, the left orbit is remarkably elongated from above downwards, so that, while the vertical diameter of the right orbit measures $1\frac{5}{8}$ inch, that of the left measures $2\frac{1}{8}$ inches.

3. The bones of the face, and especially those of the nasal cavities and the floor of the left orbit, are displaced downwards for

at least one inch, and, to permit this displacement, the nasal bones, along with that part of the frontal to which they are naturally attached, have been separated from the rest of the frontal; the two superior maxillary bones are separated from their connections with the malar bones, and the left malar from the external angular process of the frontal. Between the superior angle of the malar and the external angular process of the frontal is an interval of at least $\frac{1}{2}$ inch. The suture which connects the malar bones to the superior maxillary bones is on each side of the face torn open. The left malar remains connected to the other bones only by its posterior angle, which, joining the zygomatic process of the temporal, forms the zygoma.

4. The portion of bone which has been lost includes, towards the right side, the whole thickness of the frontal, where it forms the right frontal sinus; but, towards the left side, only the outer table, so that the cavity of the left frontal sinus is exposed. Below this is an irregular cavity in the site of the cribriform plate of the ethmoid, which portion of the bone, as well as almost the whole of the right orbital process of the frontal is lost, while the nasal bones, the turbinated bones, and the vomer, although displaced, have not materially suffered in structure.

5. It is evident that the edges of the deficiency in the forehead, upper part of the nasal cavities, and roof of the right orbit, have been rounded off by the action of the soft parts, as is also the left external angular process of the frontal. The edges are not sharp and ragged, but have evidently undergone a healing process. This could have taken place only in the course of a very considerable space of time after the infliction of the injury.

6. On viewing the basis of the skull, the circumstances most to be noted are, the angular projection of the left zygoma, giving rise to an increased capacity of the left zygomatic fossa, and the fact that, while on the right side the suture which connects the temporal to the sphenoid, and runs into the fissura Glaseri, is obliterated by ossification, the corresponding suture on the left side is quite open, a result, no doubt, of the violence by which the fracture of the frontal and the displacement of the bones of the face had been produced. The obliterated state of the suture on the right side makes it probable, from the mere inspection of the skull, that years had elapsed between the date of the injury and the death of the patient.

7. With all the serious damage done to the frontal and the bones of the face, to the orbits and the cavity of the nostrils, these parts having apparently been ploughed up, probably from right to left, the forehead shattered and partly torn away, and the face in a great measure dislocated from the rest of the cranium, it seems likely that comparatively little injury had been sustained within the proper cavity of the cranium. The sella turcica, and the anterior fossæ of the basis of the cranium, so far as they are formed by

the sphenoid, are uninjured, so that, although the cribriform process of the ethmoid and the roof of the right orbit have been destroyed, the dura mater and the brain may scarcely have suffered, or may even have escaped completely. This, however, is merely a conjecture; and is, in fact, contradicted by the history of the case.

VII.—*Miscellaneous Communications.*

1. *Case of Twin Gestation—Partial Placenta Previa—Expulsion of Placenta before Birth of Second Child.* By JAMES BARCLAY, M.D., Camperdown.

May 6, 1855.—At 10 a.m. was called to attend Mrs. H., who had been in labour from 5 a.m. It was stated that there had been a discharge of blood, in small quantities, from the time labour commenced. On examination, the os uteri was found dilated to the extent of a crown-piece; and on the internal surface, towards the left side, a rough fibrous projection could be felt, from which blood trickled down on the finger. About noon the first child was born. It was of small size, and appeared weak and anæmic. On passing the hand over the abdomen of the mother, the uterus was felt nearly as large as before. Pains immediately returned, and the breech of a second child presented. In about fifteen minutes the breech was expelled, and immediately afterwards the placenta was also expelled over the shoulder and back of the child, previous to the head being born. The funis was tied immediately on this being observed, and labour was concluded by manual efforts, the finger being introduced into the child's mouth to facilitate extraction. The child was still-born. The mother recovered without an unfavourable symptom, but the first born child died at the end of one month.

The above case is somewhat peculiar, from the combination of circumstances. Cases have been reported of placenta previa, where the placenta was expelled before the child;* but I am not aware of any case of plural gestation, partial placenta previa and expulsion of placenta before the birth of the second child, having been recorded.

As somewhat analogous to the above, we copy the following case from the Dublin Hospital Gazette, in which the placenta was also expelled by the natural efforts, before the birth of the child:—

2. *Case of Uterine Hæmorrhage before Delivery.* By GABRIEL STOKES, M.D., Mullingar.

Mary Daly, aged 35, a butcher's wife, a strong, vigorous woman, in the eighth month of her twelfth pregnancy, was attacked with

* See Ramsbotham's *Obstetric Medicine*; La Motte, *Traité des Accouchemens*, 1765, Obs. 321-3; *Med. Gazette*, July 13, 1839.

uterine hæmorrhage, recurring several times each day. This state of things continued for about a fortnight, and reduced her very much when her labour came on, each pain being accompanied by violent hæmorrhage. She had no attendance but an old midwife, and it appears, after labour had continued for fourteen hours in this way, that the placenta was completely expelled from the vagina, and the flooding ceased. The midwife separated the placenta, and although the woman was in a state of extreme exhaustion, strong labour pains continued. Twenty-four hours subsequent to this, and thirty-eight from the commencement of her labour, I first saw her, and was informed of the foregoing circumstances, and shown the placenta. The woman, though blanched by loss of blood and prostrated in the extreme, still had pains; and on making an examination, I found an arm presentation, the hand being in the vagina. I immediately introduced my hand, and succeeded in turning and delivering without much difficulty, giving stimulants freely. She continued for several hours in a very low and faint condition, but reaction slowly setting in, she gradually recovered, without having any bad symptom.

This case appears to me to be one of placental presentation, and is remarkable from the circumstance of the placenta having been expelled by the contractile power of the uterus *previous to the birth of the child*; and I have no doubt the child would also have been born (of course dead) by the natural efforts of the uterus, had it not been for the accidental circumstance of the arm presentation.

In cases of placental presentation, I have more than once seen the hæmorrhage controlled by the pressure of the descending head of the child, and the woman safely delivered without any operative interference; but I am not aware of any case on record where the placenta was actually expelled before the birth of the child, by the natural contraction of the uterus,* thus putting a stop to the hæmorrhage, although the birth of the child was retarded by an arm presentation; and when delivery was effected by turning the child, that the patient recovered after such violent and long-continued flooding.

3. *Cases of Pharyngeal Abscess.* By WILLIAM LOCHHEAD, M.D., Glasgow.

Case I.—On 1st April, 1855, I was called to an infant, aged six months, that was very much reduced by the discharge from abscesses, which had formed on various parts of the body, but which had now dried up. It was breathing with some difficulty, every inspiration being accompanied with a sound, as if the nasal passages were obstructed. On examining the nose, nothing could be found sufficient to account for the symptoms; neither was there

* Many cases of this kind are on record. See Dr. Simpson's *Obstetric Memoirs and Contributions*, p. 684, where a great number are alluded to.—ED. G. M. J.

any enlargement of the tonsils, nor indeed any morbid appearances, so far as I could observe, except that the mucous membrane was redder than natural, this being the only evidence of the presence of inflammation. The dyspnœa appeared to me to depend on some obstruction connected with the posterior nares, and not upon any inflammatory action going on in the organs of respiration, as the sounds of the chest were quite normal. I ordered the child to be placed in an easy posture, allowing it perfect liberty to move its head in whatever direction it seemed to be most at ease, while it was made to inhale the vapour from warm water, and had a blister applied to the nape of the neck. Next day, and indeed for several days afterwards, the breathing got very little worse. But on the 8th of April the symptoms were much aggravated, the breathing being accomplished with difficulty, and attended with a loud noise, the head thrown back, the face pale and anxious, and the mouth wide open, with great restlessness. On examining the throat minutely, there was observed the rounded form of an abscess, deep in the pharynx, situated in front of the fourth cervical vertebra. Its real position, however, could not be accurately ascertained, as retching was induced whenever the tongue was touched. I was satisfied that it was an abscess, from its having so suddenly assumed its present prominent position, nothing having been observed the day previously. Deeming the case now of sufficient interest and danger to justify a consultation, Dr. Lawrie was called in, who at once confirmed my views, both as regarded the nature of the case, and the immediate treatment to be adopted. The swelling being very deeply situated, and not easily brought into view, was with some difficulty reached; but by pressing down the tongue with the index finger of the left hand, a bistoury, guarded to within a short distance of its point, was thrust into the swelling, when there issued a copious discharge of pus, with instant relief to the little sufferer.

On the 9th the dyspnœa had again partially returned, from the sac of the abscess having again filled. I did not, however, interfere until the symptoms were more urgent, thinking that the matter would soon find its way through the old opening. Early on the 10th I was summoned in great haste, as the child was said to be dying. I found all the appearances of impending suffocation more marked than ever they had been. So hastily, having guarded my abscess lancet, I proceeded to make a free incision into the tumour as far down as I could reach, when a large quantity of foetid pus was discharged, and complete and permanent relief followed. For a few days I emptied the sac occasionally, by pressing upon it with the finger; but from that time up to the 3d May the child has done well, and is at present in vigorous health.

I ought, perhaps, to state that the patient had been put upon

sirup of the iodide of iron, quinine, port wine, and every other means that could be thought of to improve the general health; but these means having nothing to do with the abscess under consideration, need not be enlarged upon.

Case II.—On the 2d of August, I was requested by my friend Mr. R. Renfrew to see a child, aged eleven months, with an inflamed submaxillary gland, which had been gradually subsiding under appropriate remedial measures. But as the dyspnoea seemed to increase, although the swelling was not so great, he thought there might be some inflammatory action going on in the larynx. On accurate examination, however, it was found to be a case of abscess in the pharynx. As the danger was not imminent, we agreed to defer interference until the swelling became more pointed. On the succeeding morning there was still no urgent necessity for interference, and as the breathing was not worse, we thought it better still to wait. In the evening the symptoms became more alarming, the dyspnoea very great, and the abscess more enlarged and prominent. As I found great difficulty in reaching the abscess, guided, as in the former case, by the index finger, I pressed down the tongue by means of a spoon, bent to nearly a right angle, which enabled me to see the tumour, and to open it exactly in the mesial line, and at its most dependent part, which had the subsequent advantage of allowing the sac to empty itself completely, without further interference, which certainly happened, as the case gave no further trouble.

Remarks.—These cases of abscess do not differ essentially in their nature from abscesses in general, but derive their peculiar interest from their situation alone; and as, according to the adage, to be "forewarned is to be forearmed," I may save some of my professional brethren much anxiety by having given them a hint regarding the formation and means of diagnosis of abscesses in this region of the body, I have presented the details at what some may think a greater length than their importance demands. When, however, we consider the comparative frequency of inflammation in the air passages and surrounding structures, more especially in children and infants, practitioners cannot be too well acquainted with every concomitant circumstance that may assist the diagnosis in each particular case. Indeed, no one who had not really seen such cases as those described could believe the difficulty in the diagnosis in the earlier stages of the disease. For my own part, although watching my little patient carefully for some days, it was only when the case reached its height that I was sure of its real nature. Many might think they had to treat a case of ordinary laryngitis, when the violence of the dyspnoea suggests a particular examination of the air passages, and an abscess is discovered.

As to the exact situation of the abscess, I believe, in both cases, that it was about the fourth cervical vertebra, or between

the fourth and fifth; but it is difficult to fix its real position, as the moveable pharynx ascends when the tongue is pressed down. But from the great obstruction which it causes to the respiration, it appears to be immediately behind the larynx.

The treatment, when the real nature of the case is made out, is simple enough; viz., to open the abscess in the mesial line, and at the most favourable point for the free exit of the pus. In order to avoid the loss of blood, which is of importance when the child is weak, and to prevent the necessity for a second operation, I would not recommend the use of the lancet until the abscess became well defined.

The causes of pharyngeal abscess may be found in that of abscesses in general, and, consequently, the prophylactic as well as remedial measures must be adapted to the exigency of each particular case. But as my object in this paper has been merely to call attention to the termination of the inflammatory process, and to put upon record these two cases, it is not necessary to go into the origin and history of this very rare and highly interesting affection.

4. *Case of Aneurism of the Abdominal Aorta.* By WILLIAM WEIR, M.D.

— Sutherland, aged 38, rather stout, and of healthy appearance, came under my care Feb. 12, 1852. Exactly in the centre of the abdomen, extending from a little below epigastrium downwards to the pubis, was situated a tumour, the size of a child's head. It had commenced about nineteen months before, and when first noticed was about the size of a hen's egg, and situated a little to the left of the umbilicus. It is now firm and hard; it cannot be diminished by pressure, and it has a strong heaving pulsation, synchronous with the action of the heart. This pulsation is equable, and involves every part of the tumour. On minute examination with the stethoscope, no bruit nor rushing sound can be detected. When first discovered, the swelling could be lessened in size, but it is now fixed firmly, and cannot be raised from its position in any perceptible degree. There is little pain in it, but he has occasionally great pain in the testicles, stretching upwards to the tumour. This pain is sometimes extremely severe, particularly at night, requiring for relief large doses of laudanum, which he has been in the habit of taking for some time past. General health good. Pulse natural. No disease of heart can be detected. It appeared that this man had been in the East Indies, from whence he had just returned; and while there he had been under the care of medical men, but although his disease was pronounced an aneurism, little treatment had been adopted further than opiates, to relieve the pain of the testicles. He never experienced pain in any other part, and his general health was never much affected.

Although the history of the case, and the appearance of the

swelling, taken along with all the symptoms—the pulsation, the position of the tumour, occupying the exact centre of the abdomen, and the gradual progress of the disease—all pointed out an aneurism of the abdominal aorta, yet there was some difference of opinion, among the gentlemen who examined the patient, as to the nature of the affection. It appeared to me, however, that the tumour did not present the symptoms of any of those diseases which are apt to be confounded with aneurism. From tumours of the stomach, schirrus of the pylorus, enlargement of the liver or the pancreas, the position of the swelling sufficiently distinguished it. Neither could it be for a moment mistaken for an intestinal concretion, or a mass of indurated fœces in the colon. Fungoid, or simple fatty tumours of the mesentery or omentum, would no doubt present some of the appearances which were present in this case; but from such it was at once distinguished by its history and progress, and by the pulsation being clearly connected with the whole swelling, and not arising from the action of the artery communicated to a body lying over it. The case was, therefore, set down as one of aortic aneurism; and as I did not think that any mode of treatment would materially retard the progress of the disease, he was put upon low diet, everything stimulating was forbidden, and he was enjoined to keep his bed, and refrain from muscular motion as much as possible. I was obliged, however, to allow him occasional doses of opium or laudanum, to relieve the severe pain in the testicles of which he complained.

On 19th February, seven days after I first saw him, at six o'clock in the morning, he was seized suddenly, while rising from bed, with vertigo and faintishness. His face became very pale, and he complained of severe pains all over his body. He soon after became nearly insensible, and the powers of life began gradually to sink. At two o'clock p.m., the pulse at the wrist was imperceptible, and the pulsation in the tumour was extremely feeble. His countenance was blanched, his respiration oppressed, and he had all the appearance of approaching dissolution. The tumour was not altered in any way. It was not softer, and it still retained its rounded form, and felt hard and incompressible. These symptoms could be explained in no other manner than by supposing that the aneurismal tumour had given way, and a large discharge of blood had taken place, that the hæmorrhage, however, had been partly arrested by the formation of a clot, and that the blood continued to drain away slowly until death, which took place at six o'clock p.m., just twelve hours after the symptoms indicating the bursting of the aneurism supervened.

Inspection.—The peritoneal sac was filled with blood, partly fluid, partly coagulated. The quantity of extravasated blood was altogether about one hundred fluid ounces. The aneurismal sac occupied the middle of the abdominal cavity, surrounded, but not

overlapped, by the intestines. It had a flattened, empty appearance, and somewhat resembled in its form a bullock's heart. Its greatest length was $5\frac{1}{2}$ inches, breadth 5 inches, circumference 11 inches. At the lower end, towards the right side, where the sac was thinnest, there was a small rent, large enough to admit the point of the forefinger within the sac. This opening was stopped up by some coagulated fibrine, and within the sac was a small quantity of coagulated blood. There was no appearance of blood under the peritoneum. The aorta was cut through below the superior mesenteric artery, and the tumour dissected out along with the common iliac arteries. In doing this, the sac was found to be firmly adherent to the lumbar vertebræ. The contiguous substance of the bodies of the third and fourth lumbar vertebræ (especially that of the fourth) was pretty deeply absorbed by the pressure of the tumour. The outer coat of the sac itself also, where it lay in contact with the vertebræ, was destroyed, and in this situation the aneurismal coagulum was the only partition left. The part thus exposed was 3 inches in length and $2\frac{1}{2}$ inches in breadth. The spermatic arteries sprung from the sound portion of aorta, just immediately above the expansion of the sac, and diverged, buried in its anterior substance, downwards to the pelvis, in company with the ureters. The aneurismal sac must have encroached also on the beginning of the common iliacs; for these vessels were divided at their bifurcation, two inches apart. The heart was enlarged considerably, weighing 13 ounces. It had some quantity of fatty deposit, particularly on the right side, between the auricle and ventricle. The left ventricle was hypertrophied, the right dilated. The semilunar and other valves seemed normal; but there was an appearance of whitish deposit scattered under the lining membrane of the ascending aorta. The lungs were quite healthy.

For the following anatomical description of the tumour, I am indebted to Dr. George Buchanan, Demonstrator of Anatomy in Anderson's University, in whose hands the preparation was placed:—

... "The tumour, when distended, is about the size of the head of a child at the full period. Its posterior part was closely adherent to the vertebral column, of which its pressure had caused considerable absorption. When cut away from this attachment, an irregular tear was caused in its parietes. The tumour occupies the whole course of the abdominal aorta, from about an inch below the diaphragm to an inch above the giving off of the common iliacs. It is irregularly oval in shape, the long diameter being directed downwards and forwards; and, except where attached to the spinal column, is covered by peritoneum. On its antero-inferior surface, a little to the right side, is an irregular laceration, about an inch long, and rather less in breadth, where the sac had given way. At this point the parietes consist only

of peritoneum, a very thin wall of fibro-cellular tissue, and a thin coating of friable but regularly-disposed fibrine, the tear in the latter structure not being immediately opposite that in the peritoneum. From this, the thinnest part of the sac, the parietes gradually increase in thickness to the posterior part, where they are from one to one and a half inches, composed of organised fibrine, of a greyish colour, disposed in regular layers, of which those on the outside are much firmer than that which formed the cavity. At its entrance, the abdominal aorta admits the little finger freely; while at the point of exit, it is reduced to the calibre of a common quill."

5. *Case of Aneurism of Aorta bursting into the Pericardium.*
By WILLIAM WEIR, M.D.

A. B., aged 38, spare habit and pale complexion, but of good general health all his life, dropped down, and died instantly, on 28th Dec., 1851.

Inspection 48 hours after Death.—Upper parts of chest externally covered with dark, livid, ecchymosed patches. Flap of left lung overlapping, but not completely covering, pericardium. This lung full, large, crepitating, and of natural form and colour. Right lung adhering throughout to the ribs with moderately firm adhesions, easily separated. This lung also of natural structure, and full of air. The pericardium was observed, before being opened, swollen and projecting, evidently distended with dark coloured fluid, which could be seen through the membrane. It was carefully opened, and about 8 ounces of dark-coloured serum taken out, and afterwards large black clots of blood, to the amount of one and a half or two pounds, removed. The heart itself was flaccid, rather softer than natural, and all the cavities quite empty, not a drop of blood, nor the smallest coagulum, being found in any of them.

After some difficulty in searching for the opening through which the blood had escaped, a small aperture was found at the very uppermost part of the aorta, upon the right side anteriorly. This opening was found to be situated about the centre of a soft flaccid bag, lying upon and attached to the circumference of the aorta, quite empty, having neither coagulum nor any fluid in it. This was in structure thin, easily lacerable, and apparently composed of condensed cellular membrane. It was of a dark, livid colour, as if stained with blood. The aperture was of a size which would admit the end of a female catheter, or common tobacco-pipe, and when enlarged with the finger was found to lead to an opening in the aorta at its right side, and close upon that part where the arteria innominata comes off. On slitting open the aorta to examine it internally, this opening was found so large as to admit the point of the little finger. The edges were perfectly smooth, without any ruggedness or recent tearing,

but rather having the appearance as if it had existed for a considerable time. The vessel itself was not preternaturally dilated, but the inner coat, as far as the valves, was of a very deep red colour, and had many small whitish atheromatous spots, the size of split peas, scattered over it. There was no effused blood in the cavity of the pleura.

These appearances, the great quantity of effused blood in the pericardium, and the complete emptiness of the heart, explain well the extreme suddenness of the death in this case. Two or three beats of the heart between perfect life and complete death. It is probable that respiration would be instantly stopped, not one respiration taking place after the rupture occurred.

This case is singular in many respects. The appearance of the opening in the aorta, the perfect smoothness of its edges, and its rounded shape, sufficiently point out that it must have existed for a long time, and that it was not a sudden tear or laceration of the vessel which had taken place only at the time of death. The marks of disease in the coats of the artery would also lead to the same conclusion. The large soft flaccid bag, which was found surrounding the aorta, although presenting none of the appearances of a common aneurismal sac—having no fibrinous deposits lining it, and being extremely thin and easily lacerable—must still be considered as such, and formed probably long before death, by the external coat of the artery. It has been generally asserted that there are peculiarities connected with aneurism at the root of the aorta, arising from the anatomical structure of the vessel, which do not apply to the disease in other situations. It is even stated that a true aneurismal sac cannot be formed in this situation, in consequence of the deficiency of cellular structure rendering it incompatible with the formation of one. Dr. Hope says—"When it springs from the root of the aorta, and the middle and internal coats happen to burst, there results—not a false aneurism surmounting the true, as in other parts, but a fatal extravasation into the pericardium. . . . The reason of this is, that the part of the aorta referred to is destitute of the cellular tissue, and the pericardium which supplies its place, not being equally extensible, bursts, rather than dilates into a false aneurism."*

This doctrine, which was held by Scarpa, Bertin, Bouillaud, and all contemporary authors, was long ago overturned by certain preparations in the Hunterian Museum, which are fully described in Mr. Guthrie's work on the Diseases of Arteries. He says, in allusion to this point:—These preparations prove "that an aneurismal sac is formed by a new growth of the proper external coat of the artery, and that it owes little or nothing to cellular structure, where little or none is supposed to exist." They also prove,

* Hope on Diseases of the Heart, page 421, third edition, 1839.

"that the cause which decides whether the artery shall be ruptured, or become aneurismal, has nothing to do, as has hitherto been supposed, with its cellular covering, or whether it has one or not, but on the nature of the disease which has taken place in the artery."*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

I. *Atlas of Cutaneous Diseases.* By J. MOORE NELIGAN, M.D., Edinburgh, M.R.I.A., &c. &c. 4to. Dublin: Fannin & Co. 1855.

A Practical Treatise on Diseases of the Skin. By J. MOORE NELIGAN, M.D., &c. Pp. 439. Dublin: Fannin & Co. 1852.

THE first of the above-mentioned works contains sixteen well-executed plates, exhibiting, in a very beautiful manner, the various diseases of the skin. It is no doubt chiefly intended to be connected with the other work of the author—the "*Practical Treatise on Cutaneous Diseases*," published some years ago. His object in now publishing the plates, he states in the preface, "is to supply the student and junior practitioner with a work, moderate in size and cheap in price, which can be readily referred to in the study of what is admittedly an obscure class of diseases. The difficulties in its preparation have been much greater than I at first anticipated, for I have endeavoured, as far as possible, to combine faithfulness in representation, with accuracy of finish, without which it could not prove a faithful guide."

The figures, no doubt, appear exceedingly beautiful, much more so, we apprehend, than the originals would do. Cases of skin disease, when presented to the medical practitioner for treatment, very rarely exhibit distinct, well-defined characters, so as to be at once and accurately discriminated as specimens of papular, pustular, or vesicular affections. From the irritation arising from various local applications, from scratching, and in many cases from want of cleanliness, the eruption loses its original character, and, as we have said, will not often exhibit the clean, distinct appearance seen in these figures. The diagnosis of eruptive diseases, however, under all circumstances, is very difficult. Nevertheless, Mr. Neligan has certainly, "as far as possible," given a faithful and accurate representation of this class of diseases; and there can be no doubt that these plates will be of great use to the student and practitioner in drawing a diagnosis, as to the class, order, and species to which the particular case may belong.

* Guthrie on the Diseases and Injuries of Arteries, 1829.

There is represented in the last plate, views of the male and female itch insect, magnified 120 and 200 times respectively; likewise the view of a hair, magnified 400 diameters, taken from the chin of a gentleman affected with true sycosis. It represents "a portion of the hair-sheath, separated from the hair; the outer membrane of the sheath; the contents containing granular matter; and groups of roundish, oval bodies," &c. In this plate there is also a figure, representing "a portion of the matter which forms the external layer of porrigo, magnified 500 diameters."

The arrangement or classification adopted by Dr. Neligan in this Atlas is the same as that proposed in his "Treatise on Diseases of the Skin," although it may no doubt be used with any other treatise on these affections. While looking over the "Atlas," we have been induced to examine also the "Practical Treatise." This was published in 1852, and we are inclined to consider it a very superior work, combining accurate verbal description, with sound views of the pathology and treatment of eruptive diseases. It possesses the merit of giving short and condensed descriptions, avoiding the tedious minuteness of many writers, while at the same time the work, as its title implies, is strictly practical. The classification adopted does not differ much from that of other authors. He treats separately of the exanthemata, vesiculæ, pustulæ, papulæ, and squamæ, which five classes, we rather think, might be made to include almost all cases of skin disease, at least for practical purposes. He follows other authors, however, in devoting separate chapters to hypertrophisæ, hemorrhagiæ, maculæ, dermatophytæ. The "syphilides" and "cancrodes" are also set down in this treatise as separate orders of skin affections, although it is undoubted that nearly every variety of eruption is capable of being produced by the syphilitic poison. Dr. Neligan says, when treating of this order of eruptions:—

"The diseases of the skin which owe their origin to this cause present the same elementary characters as those which are not so produced, and may assume in different cases the form of nearly every variety of eruption which has been described in the preceding pages; but they have certain specific features by which they are readily distinguished, and the treatment by which their removal is to be effected consists in the employment of remedies calculated to eradicate from the system, or counteract the effects of, the constitutional taint to which their existence is due. It is for these reasons that most modern dermatologists have thought it necessary to describe the syphilitic eruptions as constituting a distinct group of cutaneous diseases." Pp. 369.

Accordingly, we find in this chapter descriptions of these syphilitic eruptions in the order of classification adopted in treating of the non-specific cutaneous affections. The syphilitic exanthemata, vesiculæ, pustulæ, papulæ, &c., are gone over *seriatim*. We cannot help thinking that this chapter might have been judiciously omitted without any great loss to the reader. The distinction in the syphilitic and non-syphilitic eruptions consists not in any

difference in the eruption itself, but only in the circumstance that the former arise from the introduction of a poison into the system, while the latter originate from some other cause. Dr. Neligan has not thought it necessary to delineate these syphilitic eruptions in a separate plate in his Atlas, just because they would have presented the same appearances as cutaneous affections arising from ordinary causes. The only venereal eruption we find in the Atlas is in Plate XI., fig. 1, where a representation of *psoriasis syphilitica* is given. This figure, by the way, looks much liker a case of ecthyma, the blotches presenting more the appearance of pustules than the scales characteristic of the squamous eruptions.

Dr. Neligan states that the syphilitic squamæ constitute rather a frequent variety of secondary eruption. We would be inclined to consider them the most frequent of all syphilitic skin diseases; not very difficult of cure, but extremely apt to return. We have not found, as he seems to have done, that "the usual general symptoms of secondary syphilis always accompany" this syphilitic psoriasis. On the contrary, according to our experience, it has occurred in many cases without any other venereal symptom, even sore throat. On this account, the syphilitic is often difficult of diagnosis, particularly where the patient, as is too often the case, denies having ever had any primary symptoms. When the eruption is accompanied with other secondary symptoms, the diagnosis, of course, becomes easy enough. It is also stated that "syphilitic psoriasis differs especially from the non-specific disease, in not being more thickly developed around the joints than elsewhere on the extremities." We cannot say we have observed this, but if it be correct, it is of much importance in connection with the diagnosis of the two affections. It is certain that the psoriasis, as well as the similar affection of lepra, usually shows the spots more extensively over the tibia and ulna, and around the joints where the bones are only slightly covered with muscular substance, than in other parts of the body.

We find that Dr. Neligan, in his chapter on the "Squamæ," does not separate psoriasis from lepra, or rather he does not consider the latter as a distinct species, but treats of it as a variety of psoriasis. In this, we think, he is so far correct, since the two affections usually designated by these terms often exist together, or cannot be distinguished from each other. His general description of the squamous eruptions, which we shall here quote, is we think very accurate:—

"Squamous eruptions may be defined to consist in the secretion of dry, laminated, whitish scales on the cutaneous surface, usually occurring in patches, often of a circular form, but sometimes generally diffused, and covering an extended portion of the integuments. The scales, which are somewhat elevated above the level of the surrounding skin, readily fall off, to be again rapidly renewed, and the portions of the cutaneous surface on which they are formed are

of a smooth, glistening aspect, reddish and dry. Scaly diseases are essentially of a chronic, non-inflammatory nature, are slowly developed, and are not propagated by contagion. They may appear on any part of the body, but they chiefly affect, at least in the first instance, the extremities, whence they usually spread to other regions, being rarely confined to a single locality, with the exception of pityriasis, which occasionally occurs on some special portion of the skin. They are developed also at all seasons of the year, and are not apt, like other cutaneous diseases, to be influenced by the atmospheric temperature, to disappear and again reappear at certain times." Pp. 214, 215.

Of the psoriasis, the chief division of the squamæ, the author describes three varieties; psoriasis *guttata*, *aggregata*, and *lepræformis*, the latter being that generally denominated lepra. It is difficult, however, to appreciate the distinctions between these varieties, the *aggregata* being only a more aggravated form of the *guttata*, and which has been named, indeed, by some dermatologists, psoriasis *inveterata*. The general description of psoriasis given by our author might, without much danger of material error, apply also to pityriasis, thus including all squamous diseases under one species, divided into several varieties. The following is the description of psoriasis:—

"The eruption appears in small, round, or irregularly-shaped spots, distinct from each other, scattered over the cutaneous surface in large circular patches, depressed in the centre, or in masses so closely aggregated and confluent as to envelop an extended portion of the skin in one vast coating of scales in consistent layers. The surface of the integument on which they are situated is raised, reddish, and apparently inflamed, but unattended with any discharge; nevertheless, when the eruption has been of long duration, fissures and cracks through the deeper-seated tissues form, from which an ichorous, bloody secretion exudes." Pp. 216.

Again, the variety which he calls *lepræformis*, the lepra of other writers, is thus minutely, and we think very accurately described:—

"Psoriasis *lepræformis*, which, as already remarked, is the form of scaly eruption described by most dermatologists as a distinct disease, and termed by them 'Lepra,' is chiefly characterized by the development of the patches in usually a perfectly circular, but sometimes in an ovoid, shape. It commences without either constitutional or local disturbance, in the form of numerous small, round, reddish stains, perfectly distinct from each other, and scarcely elevated above the surrounding skin, on which shining silvery-white scales soon appear. Gradually, but slowly, the circles enlarge from their circumference, which is somewhat more raised than the centre, attaining a size varying from a few lines to one or two inches in diameter; some of the patches coalescing, they occasionally cover an extended surface of the integument, and acquire an irregularly rounded shape,—this is almost invariably the case on the convex aspect of the joints and in their neighbourhood, on which parts the eruption presents an appearance scarcely to be distinguished from psoriasis *aggregata*; but the circumference of the patches, no matter how large they may be, is always more elevated than the centre, which, after some time, assumes a comparatively healthy condition, its colour becoming more natural, and but slight desquamation of the epidermic scales taking place from it. From the borders, however, the constant secretion and shedding of true scales continues; they become thicker

and more solid, retaining their whitish aspect, and are sometimes imbricated on each other at the outer border of each patch; the integument on which the eruption is situated also becomes somewhat hypertrophied." Pp. 224, 225.

It is correctly stated that these squamous eruptions are very slowly developed, that they are evidently of a non-inflammatory character, often continue during a long life, without materially affecting the general health, and are not in the slightest degree contagious, but more frequently depend on some peculiar constitutional state of the cutaneous surface. If the eruption disappears, and seems to be cured, it, in many cases, reappears at the end of a few months, and ultimately becomes very difficult of cure, or it may be, altogether incurable. It is a fact, also, that this kind of eruption sometimes affects only one member of a large family, all the others being quite free from the affection. The following remarks, in respect to the prognosis and treatment, are very judicious :—

"The physician should, therefore, in every case, be most careful not to promise a speedy cure, and always, before prescribing, explain to his patient the chronic character of the disease, and that it requires a steady perseverance in the use of remedial measures for at least two or three months before even an apparent amendment will be perceptible. The anxiety of mind which an individual labouring under a cutaneous eruption suffers is very great, and this, too, adds to the difficulty of treatment. The promise of an eventual cure, though after a lengthened period, tends to alleviate this anxiety, and prevents the repeated disappointment, changes of medical advisers, and trials of new plans of treatment, which the hope deferred, when a speedy cure has been promised, causes." Pp. 231.

After going over all the affections of the cutaneous surface, comprehended in twelve chapters, Dr. Neligan devotes the last, consisting of about twenty-five pages, to the "therapeutics of diseases of the skin," a review of the remedies most generally used in cutaneous diseases, and the manner in which they should be employed. From this, as undoubtedly the most practical and useful, if not the most difficult part of the subject, we shall make a few extracts.

Like most writers on this part of the subject, he divides his remedial measures into two great heads, topical and constitutional, those remedies applied directly to the eruption itself, and those which produce their effects through the medium of the system at large. Of the local remedies, he treats of bandages, baths, caustics, lotions, ointments of various kinds, and gives some excellent practical directions as to their employment. When speaking of the exclusion of air as a means of cure in skin diseases, the effect of collodion, which has been lately introduced, is thus alluded to :—

"The treatment of diseases of the skin by the total exclusion of air has within the last few years, more especially since the discovery of collodion, been much employed and highly recommended by some practitioners, while in the hands of others it has completely failed. The practice is chiefly applicable to local erup-

tions, and to those which are not attended with much discharge. Its employment in erysipelas has been referred to when speaking of the treatment of that disease; but it has not as yet been sufficiently tested by experience to enable a satisfactory conclusion as to its therapeutical efficacy to be arrived at. So far as regards the application of collodion to form an impermeable covering, it has been productive rather of injury than of benefit in any cutaneous eruptions in which I have used it; this appeared to me to depend chiefly on the uneven compression and contraction of the integument which is occasioned, causing much local irritation, and sometimes even a degree of inflammation. Such effects being due principally to the rapidity of evaporation of the ether in which the gun-cotton is dissolved, these resulting injurious consequences will probably be prevented by the recent proposal of Dr. Graves to employ a solution of gutta percha in chloroform for this purpose. Moreover, the gutta percha forms a less brittle, firmer, and thicker, though still transparent, covering to the skin, and exerts an even and more complete compression on the surface; the latter effect also being regarded by Dr. Graves as of importance with reference to its beneficial action. In his paper on the use of this substance,* Dr. Graves illustrates its therapeutical efficacy by the narration of some cases in which it proved remarkably successful; but whether it will be of such general application as he predicts, experience alone can decide." Pp. 408, 409.

With regard to the general remedies for skin diseases, we quote the following remarks:—

"The chief point to be kept in view in the constitutional treatment of cutaneous eruptions, one which has been before referred to, is, that they require, in most cases, a prolonged administration of the remedy which may be employed, and that, consequently, it should be given at first in rather small doses, and its strength increased afterwards very gradually and slowly. This is especially evident with respect to those powerful alteratives, arsenic and iodine, which are such valuable agents in these affections, yet which often produce injurious consequences by exciting local irritation, and a tendency to local inflammatory action from being given at first in too large doses; the same holds true of cod-liver oil and of many other medicines which are of daily use in the therapeutics of diseases of the skin. During the employment of any of these remedies, their administration should be occasionally omitted for a day or two, whether they cause constitutional manifestations of their effects or not, and the bowels freely acted on by purgatives, those of a saline nature being preferred if the patient's strength admit of their use." Pp. 424, 425.

The internal remedies which have been found more or less efficacious in the treatment of cutaneous diseases are liquor potassæ, sarsaparilla, guaiac, the various preparations of mercury and arsenic. This last mentioned remedy is still considered most decidedly the best for the scaly affections of the skin, and we find that Dr. Neligan agrees with most other authors in extolling the efficacy of this mineral and its combinations:—

"In the more aggravated forms of psoriasis, or when the disease has become chronic, recourse must be had to the more active alteratives, some of which have acquired a sort of *specific* reputation for the treatment of scaly diseases; and of all that have been used none effects a cure so frequently as arsenic, whether it be given alone, or its administration conjoined with the application of various local agents. In every case the beneficial action of this medicine is more decided and more speedily manifested when iodine or the iodide of potassium is employed at the same time, or alternated with it, and in those cases—not few in number—in which arsenic, no matter how prescribed, disagrees, the preparations of iodine

* Dublin Quarterly Journal of Medical Science, August 1852, p. 1.

suffice usually to cure the disease. Arsenic may be prescribed either in the fluid form or in that of pill; but, however given, the dose should be small, increased very slowly, and continued for a lengthened time, at least for several months. Of the liquid preparations, the liquor arsenicalis of the Pharmacopœias, Fowler's solution is probably the best, or the liquor arsenici chloridi, De Valangin's mineral solution may be used; they should not be given at first in a larger dose than four minims three times a day.

"Donovan's solution of the hydriodate of arsenic and mercury, which has become official in the last edition of the Dublin Pharmacopœia, is another liquid form that has been often employed successfully in the treatment of psoriasis; in consequence of its containing mercury it is especially applicable for those cases in which the eruption is either a secondary symptom, or is connected with a syphilitic taint in the system: but, from my own experience, I do not think that mercurial preparations in any form are generally applicable for scaly diseases, except in the local forms appearing in children, and I have not unfrequently seen their use followed by an aggravation of the symptoms. I have consequently, for some years back, substituted for Donovan's solution a compound in which mercury is replaced by the iodide of potassium; this mixture may then be termed an *Ioduretted solution of the Iodide of Potassium and Arsenic*; it is prescribed in the following form:—

<i>R. Liquoris Arsenicalis</i> ,.....	m. lxxx.
<i>Iodidi Potassii</i> ,.....	gr. xvj.
<i>Iodini Puri</i> ,.....	gr. iv.
<i>Syrupi Florum Aurantii</i> ,.....	℥ 3ij. Solve.

This solution, which is of a rich wine-yellow colour, and keeps unchanged for years, contains in each fluid drachm five minims of arsenical solution, a grain of iodide of potassium, and a fourth of a grain of iodine. Forty minims of it at first may be given three times a day in simple water, or in any tonic or diaphoretic vegetable infusion or decoction, as individual circumstances may indicate, and the dose gradually increased to eighty minims: it is, of course, scarcely necessary to observe that this compound, as are all which contain iodine, is incompatible with vegetable preparations in which starch is present, or with the stronger acids. In cases in which from any reason it may be advisable not to prescribe arsenic, the Fowler's solution can be omitted from the above mixture; and, unless in the inveterate forms of the eruption, or when it has been of very long standing, the iodine preparations should in the first instance be tried alone."

We think we can safely recommend this work, with the newly published Atlas, to our readers, as a safe guide for reference in the diagnosis and treatment of this class of diseases.

II. *Observations on the Life, Disease, and Death of John Hunter, in Elucidation of the Nature and Treatment of Gout and Angina Pectoris*. Being the Oration delivered before the Hunterian Society, at its Thirty-sixth Anniversary. By JOSEPH RIDGE, M.D., Fellow of the Royal College of Physicians, &c. Pp. 47. London: John Churchill. 1855.

THE greater number of medical men are no doubt aware, that the celebrated John Hunter died very suddenly, it may be instantaneously, in consequence of a violent fit of passion acting upon a heart long in a state of structural disease. That he had for many

years laboured under very distressing attacks of the affection called angina pectoris is also well known to many of the profession. Dr. Joseph Ridge, the author of the pamphlet before us, has chosen this subject as the basis of the oration delivered before the Hunterian Society at its thirty-first anniversary; and he has, at the same time, taken the opportunity of connecting the case of the great anatomist with some valuable and very interesting remarks on gout and angina pectoris.

The sufferings which Mr. Hunter endured, for many years, from the diseased state of the nutrient arteries of the heart, are here detailed very minutely, and his disease is taken up at its commencement, when he was comparatively a young man, carried through nearly his whole professional life, and the causes or agencies, physical and moral, which Dr. Ridge believes to have brought on the paroxysms, and kept up and increased the morbid changes in the heart, are related at considerable length. The whole history is highly interesting to the physiologist, the pathologist, and indeed to all medical men.

Among the causes which peculiarly prevailed in producing Mr. Hunter's complaints, Dr. Ridge brings prominently forward "ill-regulated intellectual labour and insufficient sleep." The vast amount of mental exertion to which Mr. Hunter subjected himself, would, no doubt, increase to a great degree any hereditary tendency to heart disease, and under such circumstances "four hours' rest at night and one after dinner cannot be deemed sufficient to recruit the exhausted powers of body and mind." But it appears that Hunter was peculiarly predisposed to disease from hereditary influence. "Procreated when his father was numbering nearly seventy years, he appears to have received a distinct impress of his decay and infirmities, and to have retained in the composition and mature development of the impregnated vesicle, or germ cell, and its affinities, the elements, if not the virus, of a specific disease, which stamped the seal of death on his meridian by peculiar elective textural changes, and by successive disturbance and deposition promoted his dissolution at sixty-five years of age, that at which Dr. William Hunter had previously died." * * * "In his own family, the early probabilities of life were against him from birth. Five of the seven brothers and sisters who preceded him died in childhood, from causes referable, as we may suspect, to that wide-spread, variously manifested, and often long-concealed calamity, a feebleness of organization." Notwithstanding this theoretical explanation, we would be much inclined to think that a man who lived till the age of sixty-five years must have originally possessed, not a "feebleness of organization," but very strong powers of life. Constitutional vitality must have been strong indeed that could resist such frequent paroxysms of disease as Hunter suffered for so many years. When about thirty years of age, we are told, he was threatened with pulmonary

disease, which "a sea voyage and residence with the army at Belleisle, an island off the western coast of France, and in Portugal, enabled him to cast off." But it was when he had reached forty-one years of age that he first experienced, while under an attack of gout, those painful and distressing feelings indicating heart disease, which are well described by Sir Everard Home, in his account of Hunter, and which are copied at length in the present oration. He lived, however, more than twenty years after this, being frequently seized with these distressing symptoms, under which it was often expected that he would have died. At last, in 1793, when he was considerably above sixty years of age, the well-known scene in the Board-room of St. George's Hospital took place, when Hunter, being irritated by some contradictory assertions, got into a violent passion, and fell dead into the arms of one of his colleagues.

The appearances found on inspection are minutely detailed by Dr. Ridge, and the morbid changes which the heart and arterial system had undergone, will be considered quite sufficient to explain the terrible symptoms under which Mr. Hunter so long laboured. "The heart itself was very small, appearing too little for the cavity in which it lay, and did not give the idea of its being the effect of an unusual degree of contraction, but more of its having shrunk in its size." * * * "The muscular structure was paler and looser in its texture than the other muscles of the body. There were no coagula in any of its cavities. The coronary arteries had their branches which ramify through the substance of the heart in the state of bony tubes, which were with difficulty divided by the knife, and their transverse sections did not collapse, but remained open. The valvulæ mitrales, where they come off from the lower edge of the auricle, were in many places ossified, forming an imperfectly bony margin of different thicknesses, and in one place so thick as to form a knob." * * * "The semilunar valves of the aorta had lost their natural pliancy, the previous stage to becoming bone; and in several spots there were evident ossifications." The aorta was also slightly dilated, forming an incipient aneurism. But those bony deposits—this almost general ossification—was not confined to the heart and the arteries more immediately connected with it. The morbid change had affected many of the other vessels of the body. Although the cerebrum and cerebellum were found in "the most natural and healthy state," the internal carotid arteries were ossified, while the vertebral arteries had also become bony, and the basillary artery had white spots along its coats.

These structural changes must, no doubt, have been the growth of many years, and must have proceeded slowly but certainly to that complete alteration from the healthy structure, which was quite incompatible with the performance of the functions of the organs. They certainly sufficiently explain the symptoms which

were so frequently present in the case, and which are so minutely detailed in the oration.

The reader will find all these morbid changes examined and analysed; their connection with the symptoms present during life pointed out, and their effects on the physiological action of the heart and circulatory system explained in a very interesting, and, to our mind, most satisfactory manner. The effect of disordered states of the stomach in increasing the violence of gout, and their tendency to bring on and augment the distressing symptoms arising from the affection of the coronary arteries of the heart present in angina pectoris, and the allusion to cases similar in many respects to that of Mr. Hunter, will also be found full of interest and instruction.

The history of the disease and death of unquestionably the most eminent surgeon and physiologist this country has ever produced, cannot fail to be replete with interest to every medical man, and we think that Dr. Ridge deserves much credit for the labour and pains he has bestowed on the subjects brought forward in his oration, and the able manner in which he has treated them.

III. *The Journal of Psychological Medicine and Mental Pathology.* Edited by FORBES WINSLOW, M.D., D.C.L., &c. &c. No. XXXI., July, 1855. London: John Churchill.

WE have formerly had occasion to notice in laudatory terms this very superior quarterly periodical, most ably conducted by Dr. Forbes Winslow. Upon the subject of psychology and mental science, everything connected with the mental faculties—their physiology and pathology—their healthy and diseased states, together with the kindred subjects of criminal and medical jurisprudence, nowhere can there be found so many able and instructive articles, full of useful knowledge and interesting information. The number for July, now before us, is perhaps more replete with interesting matter than many that have gone before it; and we think it would be highly proper for medical men to direct their attention more frequently than they do to subjects of this nature, which, although perhaps not so practically necessary in their profession as some others, are undoubtedly sufficiently so to require regular and careful study. It is a fact that many surgeons and physicians, when obliged to appear in courts of justice, to answer questions connected with insanity and other points in medical jurisprudence, have found themselves woefully deficient, and have exhibited very shallow knowledge, and sometimes total ignorance. This is to be regretted, and it can be remedied only by the rising generation of medical men devoting more attention to these subjects, and studying them as regularly and assiduously

as they are accustomed to do other departments of medicine. The attentive perusal of the able articles which are regularly published in the *Psychological Journal*, will materially assist in keeping up the information of the medical inquirer on all points connected with mental science, and particularly insanity and diseases of the brain and mind, as it has been the constant aim of the editor and his contributors to diffuse a knowledge of these subjects among the members of the profession.

Among the twelve articles which the present number contains, there are several which exhibit much study and reflection on the part of the authors, and the whole of them treat of subjects of interest and importance. We would particularly allude to Article III., "Autobiography of the Insane," which is mostly made up of extracts from a pamphlet recently published, entitled "Scenes from the Life of a Sufferer, being the Narrative of a Residence in Morningside Asylum." The reviewer commences his account of this work with the following remarks, in the correctness of which, we have no doubt, all his readers will agree:—

"We cannot conceive anything more deeply interesting to the practical physician, so touchingly affecting to the philanthropist, or instructive to the speculative metaphysician and medical psychologist, than the account given by those who have recovered from attacks of insanity, of the workings of the mind, and state of their feelings and sensations, during the existence of mental derangement. We have, in previous numbers of this *Journal*, placed upon record facts bearing upon the subject; and we purpose again directing the attention of our readers to a deeply interesting narrative, illustrative of this section of psychological literature. It appears that the author of the narrative before us published, in the beginning of 1851, in a periodical entitled the '*Instructor*,' a short series of papers, in which he detailed the history of his first attack of insanity. The pamphlet now records the history of a relapse, &c., which he suffered, and for the treatment of which he was confined in the Morningside Asylum, near Edinburgh."

Many curious details connected, not only with the life and history of the narrator himself while a patient in the asylum, but also with the other members of the community assembled in the institution, will be found in the pamphlet, some of which are quoted in the article in the *Journal*. As few of our readers may have an opportunity of perusing the original, we shall extract the following description of one of the inmates—a true account of the melancholy state into which the mind sometimes falls—and which, we are sure, will be perused with interest:—

"A very beautiful billiard-player was Mr. —, an old inmate of the house, and quite a psychological curiosity. He seemed like a man walking in a dream; and indeed the strange delusions of lunacy, and more especially in the case of my poor harmless friend, bear a remarkable affinity to the phenomena of dreams. I was greatly amused by the conversation of the polite old gentleman. The highest compliment he thought he could pay me, was to suppose me four thousand years old; for the events and persons of the present generation were as but of yesterday, and unworthy of notice. A portion of his extraordinary reminiscences may be worth recording, not in the spirit of levity or ridicule, but, as I said, in the light of a psychological curiosity:—

"Oh yes, Mr. —, I knew old Noah very well! There were two Noahs whom I knew; but old Mr. Noah lived some thousand years before the Noah you refer to, who built the ark. I had a good deal to do with the construction of the ark, and furnished some very useful hints in regard to the admission of light and air, and so forth. He was a very respectable man Noah, with a decent family, but unfortunately he got into very dissipated habits in his old age, and, in spite of all I could say to him, he indulged in brandy and water to a very hurtful excess!

"Julius Cæsar was a very clever man, with a bald forehead; but I was more intimate with Alexander the Great of Macedonia, as I was long in the military profession myself. I one time commanded three millions of men about three-quarters of an inch tall. No; they were not Lilliputians. I knew Captain Gulliver very well. And they were smart enough little fellows, but my men were excellent marksmen—they always aimed at the eyes, and never missed. I'll tell you, Mr. —, the most extraordinary thing you ever heard, which beats railroads. I was once transported from the farthest shores of India to the centre of Africa in three minutes! 'By what means?' he repeated in reply to a question respecting his method of transit—'By a bomb!' In reply to my remark, on the danger of being wafted so rapidly over vast oceans, he continued—'Yes; it was attended with considerable danger. I once came down souse into the ocean; but, fortunately, I hailed a vessel, which came to my relief, and I pursued my journey to the wilds of Africa, with the loss of only ten minutes!' Sometimes, however, the poor gentleman would seem doubtful of his own veracity, or the strength of his memory, and remark, 'My memory is not so good as it was, and my health, for the last hundred years, has rather failed me, which makes my head a little confused.' And thus he moves about in his waking dream, wearing out his existence between his pipe and a game at billiards, diversified occasionally by a short excursion in the neighbourhood, in charge of an attendant."

To go on with our notice of the *Journal*, another article, entitled "*Psychology of Berkeley*," although it may perhaps be considered not a little dry and abstruse by the great mass of readers, will yet be perused with interest by all who have paid much attention to the controversies between the materialists and immaterialists. We would remark, that the author gives a fair and candid account of the Berkelian theory, preceded by a short history of the doctor himself; and although it is not easy to suppose that there can be such a person as a pure spiritualist—one who denies the existence of matter altogether—yet it appears that there was a book published a few years ago to prove that there really is no existence in the universe except mind or spirit. Now, although few persons will now-a-days come to such a conclusion, yet it is the opinion of many, that in a fair philosophic discussion between an out-and-out materialist and a pure spiritualist, the latter would have the best of the argument. The article in question contains much to interest the psychological inquirer.

We may safely say the same of the other articles in the number, more particularly "*On the Uses and Influence of Mental Philosophy*," "*On the Connection between Morbid, Physical, and Religious Phenomena*," and "*Critical Remarks on the Plea of Insanity*." This last-mentioned is the continuation of an article in a previous number, and it undoubtedly takes the fair

and common-sense view of the subject, and places the "plea of insanity" on a just and proper foundation. There is also a well-written article "On the Condition of Lunatics in Ireland," and a short account of "American Psychological Literature," which may well bear attentive perusal.

But perhaps the chief and most generally interesting paper in this number, is the long, minute, and well-drawn-up account of the case of the unfortunate Buranelli, who was lately executed in London for murder. Whether this man was sane or insane, whether he knew or did not know what he was doing when he committed the crime for which he suffered on the scaffold, we venture to affirm that no one who reads the account of the case, and the full analysis of the evidence drawn up by Dr. Forbes, will rise from its perusal without the conviction that the poor man was most harshly dealt with, and had but scrimp justice awarded to him. No case at all similar to it has occurred since the celebrated one of Bellingham who shot Mr. Percival in 1812, and it is to be hoped that no other will ever again be heard of in this country. The account of the case cannot bear abridgment; it is necessary to read the whole, along with the evidence, to be enabled to draw a correct conclusion. Having done so, we do not hesitate to affirm that the introductory remarks of Dr. Winslow, which we here quote, are not at all too strong:—

"The case of Luigi Buranelli has excited, among all classes of the community, an intensity of interest almost unprecedented in the records of British criminal jurisprudence. That this miserable man was a lunatic when he committed the crime for which he suffered an ignominious death upon the gallows; that his life was cruelly sacrificed in blind submission to the speculative medical and mystical metaphysical opinions of those who, in the performance of what they no doubt conceived to be a painful professional duty, swore to his sanity and responsibility, are points easily susceptible of conclusive and triumphant demonstration.

"The execution of Buranelli will, we fear, be a foul stain and a 'damned spot' upon the humanity and intelligence of the nineteenth century, and will, we apprehend, do an incalculable amount of injury to the advancement of the science of medico-legal testimony in cases of alleged lunacy, and seriously retard the progress of British Medical Psychology. The execution of Buranelli, in direct opposition to the evidence adduced in favour of his insanity, and in defiance of the strong protest subsequently made against his death, will throw judicial psychology back in this country for at least half a century. Enlightened medical jurists had flattered themselves that great progress had in recent times been made in the dissemination of just and humane principles in reference to criminal jurisprudence. Able judges and distinguished advocates have certainly exhibited of late years a disposition to entertain views in regard to criminal insanity, more in unison with the deductions of modern science; but this event throws a melancholy blight over these bright hopes and sanguine expectations. We cannot therefore contemplate the late fearful catastrophe otherwise than with feelings of deep and painful emotion.

"The trial and execution of Buranelli establishes that we had somewhat miscalculated the amount of enlightened progress made of late in judicial psychology, for we not only find a Judge, distinguished for his learning, natural sagacity, and eminent acquirements, disposed to repudiate the plea of insanity, when based upon what able, experienced, and reflecting men conceive to be conclusive

evidence, but we, alas ! see medical jurists of character and position stepping boldly forward to support, by the weight of their testimony and the authority of their names, one of the most monstrously iniquitous verdicts of modern times ! This we conceive to be the unhappy feature, the salient point of the case, as far as the science of medico-legal testimony and the state of psychological medicine are concerned."

After giving the evidence of the witnesses at considerable length and minuteness, Dr. Forbes makes some excellent medico-legal observations on the case, in which he discusses the various points bearing upon the insanity of Buranelli with much ability, and criticises, with no sparing hand, the evidence and opinions of some of the medical witnesses for the crown. We cannot refrain from extracting the commencement, and the concluding paragraphs of those medico-legal observations :—

"It would appear altogether superfluous, after carefully perusing the preceding narrative, to encumber it with any lengthened medico-legal criticism. The facts demonstrative of Buranelli's insanity stand so prominently forward in the history of his life, are so obvious, conclusive, and transparent in their character, that it would be offering an insult to the understandings of our readers, if we were to make more than a cursory allusion to them. There are, however, a few points in the case which we cannot, without doing violence to our sense of duty, pass entirely over. We refer particularly to the adverse medico-legal evidence that decided the fate of Buranelli. We are bound to subject this evidence to a strict and rigid analysis. . . .

"In concluding these cursory comments on the case of Buranelli, we cannot refrain from expressing a sincere hope that we have in the preceding pages placed upon record the particulars of the trial and execution of the last lunatic that will suffer death upon the gallows. Such a barbarous proceeding can do no good, but, on the contrary, much mischief to the best interests of society, and is perfectly valueless when viewed as a means of preventing crime,—the only valid and reasonable excuse that can, with any semblance of justice, be assigned for the act. When speaking of the irresponsibility of the insane, and the object of punishment, the great Lord Coke says, 'the execution of an offender is for an example, *ut poena ad paucos, metus ad omnes perveniat*;' and that justly eminent jurist adds, 'but so it is not when a madman is executed, but should be a miserable spectacle against law, and of extreme inhumanity and cruelty, and can be no example to others. . . .

"The execution of Buranelli, in the teeth of a strong protest, made a few days before his death, and in opposition to facts which, if they did not conclusively demonstrate his lunacy to the satisfaction of the Judge and the jury, undoubtedly involved the matter in grave doubt and difficulty, establishing beyond all dispute a strong *prima facie* case in favour of his insanity and irresponsibility, is a matter, as we have previously observed, deeply to be regretted and sadly to be deplored. May the INTELLIGENCE, the HUMANITY, the SCIENCE, the CIVILIZATION, the JUSTICE, and the CHRISTIANITY of this great and justly renowned country never again be sullied or outraged by a repetition of so revolting an exhibition !"

With this, we take leave of Dr. Winslow's Journal for the present.

IV. *The Re-organization of the Medical Department of the Army.*

A Letter to the Right Hon. Lord Panmure, Minister of War.

By PHILO-MEDICUS, Fellow of the R. M. C. Society, &c. &c.

Pp. 39. London: James Ridgway, 1855.

WE believe most men—and, we may say, all medical men—have long been convinced that the medical officers of the army have not been altogether well treated by the Government of this country. It has long been suspected, if not actually admitted, that this department of the public service required a very thorough and radical reform, and the occurrences regarding the army surgeons, and the disputes respecting medical stores, and other matters connected therewith, which agitated the public mind at the breaking out of the war, sufficiently prove the correctness of this assertion. The author of this letter now states—and we hail the information with no little satisfaction—that it is at length positively determined that there shall be, in some manner or another, a complete re-organization of this department. We think he sufficiently proves the necessity for this, and the object of his letter to the Hon. the Minister of War appears to be to point out the plans or changes which, in his opinion, are necessary to render the medical service complete and effective.

Philo-Medicus considers that there is no such difficulties attending the reforming of the medical profession in the army, as evidently exists in regard to that of civil life. If it were so, the numerous failures, during the last twenty years, of all attempts to bring about a satisfactory reform in the civil, might well deter any one from making a similar attempt in regard to the military. "Medical reform," he says, "has puzzled the most painstaking committees of the House of Commons, and for upwards of twenty years confused and perplexed the ablest Home Secretaries; but the difficulties almost insurmountable to an equitable and satisfactory remodelling of the medical profession in civil life have no existence as respects it in the army, nor are the questions analogous or in any way connected. With a sincere and honest desire to accomplish the task, it is our conviction it would be found more easy of execution than its vast extent and importance indicate. With this belief, and trusting to the good faith of the Government, we do not despair of seeing the organization and efficiency of the medical department raised to the highest perfection."

The whole profession will agree with Philo-Medicus in maintaining the absolute necessity that the Director-General of the Medical Department should have full and unbounded authority in everything that relates to the health of an army, and the care and medical treatment of the soldiers. If he and his officers have not this weight and authority, it is impossible they can discharge the necessary duties in a proper manner.

Philo-Medicus then speaks of the various changes he would recommend, alluding again to the necessity for consulting the Director-General on everything. He points out the kind of education necessary for the young army surgeon, and he makes some very excellent remarks upon "military surgery" and "military medicine," maintaining, as many others have done, that these can only, or at least principally, be learned in the service itself, and that professorial chairs for "military surgery," even if attended by the majority of medical students—which they are not—can never initiate the young surgeon into the difficult duties of the field of battle. We presume most military medical officers will subscribe to the following remarks:—

"'Military medicine' and 'military surgery' can only be acquired in the service. It was there, in the field and in the tent, in camp and in quarters, that Pringle and Brocklesby, and Monro and Jackson, became acquainted with military hygiene and military medicine, and there only; it was there that Wiseman and Ranby, Hennen and Guthrie, first learned what military surgery really is; it was this school, and this school only, that furnished the Parés, and Percys, and Larreys of France. We say it advisedly, that whatever relates to military hygiene, the causes and prevention of disease in fleets and armies, is sufficiently dwelt on in the ordinary courses of practical medicine in every school, and, if not, the candidate for appointment in the medical services of the State can make himself acquainted theoretically with this subject by a course of reading and study, and lectures can do no more. Fever, inflammation of the lungs, or an attack of dysentery, is the same disease, whether it appears in a soldier or in a civilian, and requires similar treatment, modified, it may be, by peculiarities of climate, locality, and condition of the individual, arising out of the service, but neither books nor lectures can teach these things or foresee them. A fracture, or dislocation, is the same accident, whether it occurs in a blue jacket, a red or a black coat, and amputation does not require to be differently performed according to the profession of the unhappy sufferer. Would we then break up the chair of military surgery in the University of Edinburgh, and prevent the institution of similar chairs in the capitals of England and Ireland as useless? Certainly not. Let those attend them who may;—the more the better."

One very particular measure recommended by Philo-Medicus for the re-organization of the medical department of the army, and which he considers of the first importance, is the formation of an "ambulance corps," the necessity for which, it would appear, has been already recognised by Government. "A well-appointed ambulance corps," he says, "acquainted with its duties, trained in the field and in the hospitals, accustomed to act as orderlies, *officered and commanded by the medical staff*, would be a blessing to the army, and of inexpressible service to the department in the execution of its duties. The ambulance corps should be selected from disciplined soldiers, who have been some years in the service, and have given proofs of sobriety and steadiness, indispensable qualities to their usefulness. As a reward for continued good conduct, they should have a higher rate of pay than men in the ranks, increasing with length of service, and prospective in benefit after discharge from the army."

. Another necessary part of the "re-organization," insisted upon

by Philo-Medicus, is the construction in London of a large general hospital for the sick and wounded of the army. "This hospital ought to be complete in all its parts—a perfect model in equipment, arrangement, and management, possessing every requisite, and every modern appliance, architectural, medical, and surgical." Besides being a receptacle for the sick and wounded, this hospital would be the very best medical school for the student and young army surgeon. Three or four thousand disabled soldiers would be annually admitted during peace, and more in time of war, presenting various diseases, medical and surgical, in every way adapted for clinical observation and instruction. Lectures would be delivered by the medical staff, oral instruction would be given, and operative surgery taught in all its details. The details of this proposed general hospital are given at large, which it is not necessary to enumerate here, and the author urges his plan evidently with great knowledge of the subject, and shows forth its advantages in forcible language, maintaining that such a proposal is neither utopian nor altogether new:—

"With some such scheme as the above, and the organization and changes proposed, the Government would reap every advantage which the French system of instruction possesses, with a certainty, which it has not, of procuring for the medical service, almost without exception, young men with the highest attainments, both literary and professional, and maintaining the department in a state of perfect efficiency for all purposes. It is chiefly in the admirably organised *corps d'ambulance* that our neighbour and ally possesses superiority over us in the field, and on the line of march; and, in the hospitals, if it enjoys any advantage, this is owing to the extra number of attendants, male and female, upon the sick, the perfection of the purveyor's department, its entire subjection to the orders of the medical officers, and the exemption of these officers from all duties not strictly and exclusively professional. In these respects, and in these only, is the French system of medical organization worthy of imitation."

We are bound to say that Philo-Medicus treats all parts of his subject with much talent, and in plain and forcible language. We are happy in meeting, under this *nom de guerre*, an old pupil and alumnus of our Glasgow Medical School, and, if we mistake not, an able contributor to the former series of this Journal; and we are doubly happy in giving our meed of praise to the merits of this *brochure*, so well timed and so ably written, and which has already received from those high in authority, that respect and attention which it so justly deserves.

V. *Harrogate and its Resources: Chemical Analysis of its Mineral Waters.* Report addressed to the Chairman of the Harrogate Water Committee. By A. W. HOFMANN, F.R.S. With an Appendix on the Modes of their Administration. By the Committee. Pp. 54. 1855.

It appears that a committee of the inhabitants of Harrogate, authorised by a public meeting, employed Professor Hofmann to

examine its mineral waters, the result of which is the present very elaborate and lengthened report of their chemical composition, and an appendix by the committee, setting forth their numerous medicinal properties. The substances contained in these springs are so very numerous, and the analysis of the Professor has been gone into so minutely, detailing at great length the quantities of the different ingredients, and their various chemical actions on each other, that every one desirous of obtaining an accurate knowledge of the subject, must consult the pamphlet itself. The chemical philosopher may no doubt find such details interesting, but the general or even the medical reader would consider them dry and tedious. The medical remarks in the appendix, drawn up by the committee, may, perhaps, be read with advantage by those who are proposing to visit this celebrated watering-place, for the purpose of trying the effects of its waters for the removal of cutaneous diseases, or the mitigation of liver and stomach affections.

These remarks, as might be expected, are rather laudatory ; but there seems to be no doubt that the waters of Harrogate have enjoyed the reputation, for a great many years, of being useful in the cure or alleviation of various affections, and the present analysis of Professor Hofmann demonstrates that they still retain the same *chemical composition* which they have had for ages ; so that, if they have been formerly beneficial as medicinal agents, it is only reasonable to conclude that they will still continue to be so. Independently, however, of the medicinal qualities of the waters, there are here, as in other watering-places, *local advantages*, which, no doubt, have much influence in relieving or removing the various morbid feelings which afflict invalids resorting to such places for the recovery of health. In Harrogate the invalid "breathes an atmosphere of remarkable dryness, great purity, and of such rarity, that some persons even suffer from the want of a denser air. The neighbourhood possesses many interesting objects of history and art, many natural scenes of great beauty are within easy riding and even walking distances, and great facility is afforded by three railways for more distant excursions," &c., &c.

The mineral waters of Harrogate have generally been considered by the profession as applicable chiefly to diseases of the skin, and this principally on account of the sulphur and its compounds which they hold in solution, and, indeed, from time immemorial, cutaneous affections have been regarded as peculiarly amenable to the influence of sulphur waters. The affection of the skin, however, as is well known to medical men, is often merely an effect of some internal disease, most generally some functional derangement. Hence the committee state, "The aspersions of the character of the waters by the statement, that 'they are good only for skin diseases,' argues no small amount of inattention

to what diseased skin really implies. Unquestionably, these waters do cure many skin complaints, they ameliorate most, and exasperate none if judiciously employed; but they exert their influence on the ordinary routine of the economy, and by effecting modifications in the functions of the system *generally*, and not of the *skin only*. Being so, then, these modifications of the interior may be as confidently predicated in the *absence* of these diseases of the skin as in their *presence*; only the evidence of such operation is not so palpable."

And hence we find that these mineral springs are said, in this laudatory pamphlet, to be applicable for the removal, or at least the mitigation, of almost all diseases to which the human body is liable. The great constitutional disease, scrofula, dyspepsia in all its varieties and forms, gout, rheumatism, chorea, anæmia, and many others, this committee maintain, will be much benefited by a trial of the Harrogate water; and the medical remarks conclude with the following paragraph:—

"It ought not to excite surprise that we lay claim to such extensive utility for these waters, when their number and variety are remembered; and when we add to these intrinsic virtues the extrinsic advantages of our locality, together with the social *réunions* of a watering-place, some idea may be formed of the promise which Harrogate holds out to the invalid and the valetudinarian."

SELECTIONS FROM MEDICAL JOURNALS.

I. TWO FATAL CASES, ONE OF APOPLEXY, AND THE OTHER OF EPILEPSY, OCCURRING IN THE SAME FAMILY: WITH REMARKS. BY ROBERT DUNN, ESQ., F.R.C.S. ENG.

THE cases are those of a father and daughter. The former died of an attack of hemiplegia twenty hours after the seizure; the latter sank from exhaustion after a succession of epileptic fits, having been the subject of epilepsy for ten years. In both cases, I had the advantage of a *post-mortem* inspection. It may not be unprofitable to narrate them together.

The Father's Case.—History. The father died at the age of 50. He was of a very convivial turn of mind, fond of society, of good living, and of dining out; but under the excitement of intoxicating potions, he lost all power of self-control, and ran into great excesses. He inherited the gouty diathesis from his father, and about twelve years ago had a severe attack of rheumatic gout, which lasted for three months, and confined him to the house. His head was seriously implicated. During the last six years of his life, he had been under my observation, and I had had frequent opportunities for observing his character and conduct. He had been more steady, regular, and temperate in all his habits. But he was subject to disturbance in the cerebral circulation, to a sense of giddiness at times, and to fleeting pains in the head, attended with depression of mind. On the evening previous to his fatal attack, his mind was more than usually buoyant, to the great delight of his friends, who congratulated him on the occasion of his apparently marked improvement in health and spirits. The very next day, however, February 21st, about one o'clock p.m., while sitting quietly by the fireside in his parlour, he felt suddenly that he had lost the

use of his right side. He attempted, by means of the left hand, to raise himself up, and would, in consequence, have fallen upon the floor, but for the timely interference and prompt assistance of his wife, who fortunately happened at the moment to notice the effort he was making to rise. I was immediately sent for. I found him hemiplegic on the right side; there was total loss of voluntary motion, and diminished but not abolished sensibility; the reflex actions were persistent. He was quite sensible and collected; he did not complain of any pain, and was not conscious of having had any fit; there was no drawing of the mouth, nor had there been any convulsive action or twitchings; but the pulse was extremely weak and feeble. Ammonia was freely administered; he was carried up stairs, and put to bed. A mustard poultice was applied to the nape of the neck, hot water to the feet, but he never rallied. After the first two hours, there seemed to be indications of a little improvement; the pulse was stronger, and there was more warmth upon the surface of the body. He was so sensible and collected, that he asked his son to read the *Times* newspaper to him. Soon after this, however, he was sick, and vomited; his respiration became more and more oppressed, and the pulse more feeble. But he lay perfectly passive; there was no convulsive action whatever, nor rigidity of arm or leg. About twenty hours from the time of the seizure, he quietly expired; the breathing becoming sensibly more and more laborious and oppressed.

Examination thirty-six hours after death. On removing the brain, and placing it with its base upwards, the attention was at once arrested by the state of the cerebral arteries. The circle of Willis was studded with atheromatous deposits in all directions, and the same condition was found to prevail generally in all the arteries of the brain, more especially in the branches about the fissura Sylvii; even on their minute ramifications atheromatous spots were detected by the microscope. There was also a very perceptible swelling or bulging out on the left crus cerebri from a large clot of extravasated blood, with parietes so thin, that the blood seemed ready to burst forth. This bulging was found, upon further examination, to form part of a large extravasation, which had taken place from one of the arteries in the fissura Sylvii. The effusion extended backwards into the posterior lobe of the brain; it had broken up the crus cerebri, and encroached upon the vicinity of the pons Varolii. The crus cerebri and surrounding cerebral substance, the tractus opticus, and corpora quadrigemina, on the left side, were in a state of white softening. The corpus striatum and thalamus opticus, on the same side, were implicated in a like degeneration on their outer surface. In the right hemisphere, in the white substance of the middle lobe, on a level, and beyond the outer side of the corpus striatum, an apoplectic cyst, the remnant of a former clot, was found. The hemispheres were healthy, the convolutions well developed, and the cerebellum was large, and in a normal state. The sinuses and veins were gorged with livid blood. The brain was the only viscus examined.

Remarks. In this, and in cases like this, the point of practical interest to which I am anxious to direct the attention of others, is the atheromatous condition of the vessels of the brain. I have a strong conviction in my own mind, the result of personal observation, that these atheromatous deposits, or, as some pathologists would style them, steatomatous, are associated generally, if not constantly, with the gouty diathesis. It is true, that, in the present instance, there had been but one regular attack of rheumatic gout, twelve years ago; but it must be borne in remembrance that the attack was a very severe one, and that the head was seriously involved. Under my own observations, there had since been several threatenings, but which, with proper care and remedial treatment, were warded off. . . . In rheumatic gout, we have both defective assimilation and imperfect excretion; nay, more, for where the gouty habit is perpetuated by excesses and errors of diet, both the sources, the chyle and the effete particles from whence the blood is fed, are contaminated. It is, therefore, a matter of small surprise that the fibrous tissues of the arteries should undergo disintegration and transformation into products low in the scale

of organization, into steatomatous, atheromatous, and calcareous degenerations. But whatever may be the peculiar diathesis from which steatomatous and atheromatous deposits are eliminated, they are the associates of rheumatic gout, and harbingers of apoplexy. It must be admitted that such a condition of the vessels of the brain is a grave affection, and, in proportion as their vital endowments are impaired, pregnant with the most serious consequences. When the arteries are no longer resilient elastic tubes, but are inelastic, here dilated and there contracted, the regular distribution of the blood is deranged, and the cerebral functions disordered. Rupture, and the extravasation of blood, as an apoplectic seizure, may follow; or occlusion and its consequences, an arrest of nutrition, atrophy, white softening, and the total abolition of the functional powers.

Daughter's Case.—History. In little more than a month from the death of her father she sank from exhaustion, after a succession of epileptic fits, rapidly following each other, in the nineteenth year of her age. She had been subject to epilepsy for ten years. She was the fourth of a family of seven children, five of whom are still living. They are not remarkably strong and robust, but of pallid complexions, and giving the impression of being of delicate constitutions, though they are all healthy. The brother, who died at the age of thirteen years, was of a strumous habit, and fell the victim of hip disease. The mother is a fine healthy woman, with a well-regulated mind, of active business habits, and has never suffered from serious disease of any kind whatever. The daughter herself was a tolerably robust and healthy child up to the age of seven years, the period of her second dentition: physically and intellectually, she was a child of good promise, of an amiable disposition, kind and affectionate, but unduly sensitive. At this period she had a slight attack of chorea, which readily yielded to appropriate treatment of the tonic kind. But scarcely had the nervous system recovered its tone, when she caught scarlatina, and this was followed by rheumatic fever. The attack of scarlatina was not of a severe or malignant type, nor was that of the rheumatic fever which succeeded it; but following, as they did, in such quick succession after chorea, her whole nervous system received a shock from which it never thoroughly recovered. In the midst of the excitement of preparing for a juvenile party, the first fit took place, and was the occasion of great alarm. Six months elapsed before she had another fit, but afterwards they became frequent at varying intervals, and without any premonitory symptoms; eventually, after the lapse of two or three years, they were so frequent and so severe that it was found necessary to remove her from the school which she attended. After this, she had private instructions at home, but it was soon discovered that her aptitude for learning was greatly impaired. As the period of puberty approached, the fits became more severe and frequent. The first flow of the catamenia came on about her fifteenth year, and continued to be regular afterwards. Its appearance was looked forward to in the hope of its being sanitary, and for a time the paroxysms were not so frequent, and were less violent; but ultimately, and for the last two or three years of her life, scarcely a day passed without an attack of the *petit mal* of Esquirol. At times, the attacks were attended with violent convulsions, when she perspired profusely; the perspiration had the acid odour characteristic in rheumatic fever; the urine was loaded with lithates and purpurates, and sometimes with bile. I may here remark as to the medical treatment generally, that I had several consultations on her case, and all the usual remedies were tried, without any permanent benefit. The cold shower bath was used. Purgatives and tonic medicines in varied forms were given. Great attention was paid to the state of the secretions and excretions, and the elimination of morbid elements from the blood. But, in despite of all these, the fits became more frequent, and she appeared to be evidently but gradually passing into a state of fatuity. The sudden death of her father aggravated her attacks, and she sank from exhaustion, after a succession of paroxysms, rapidly following each other.

After puberty, her organic frame and muscular system became well developed, and she was, with the exception of a pallid countenance and rather a vacant gaze, a stout and fine-looking and well-formed young woman. But her head

was small, and there was an evident deficiency in the anterior development of the cranium. Her appetite was excellent, and the animal functions were vigorously performed. She had a strange propensity for hoarding, and was very fond of money. However defective her memory on other matters, it never failed her in respect to any money which belonged to her; and when in any trouble or grief, from whatever cause, a small gift of money from her mother had a magic influence; all grief was instantly banished from her mind, she was pleased and happy.

Inspection of the body thirty hours after death. The viscera of the abdomen and chest were all healthy, and there was no disease of the valves of the heart. On removing the brain for inspection, the narrowness of the anterior lobes, and their want of breadth and height in front, and the deficiency of anterior development generally, were remarkably conspicuous. Altogether, the brain was small, but from the fissura Sylvii backwards, the parts about the base of the middle and posterior lobes were more full and voluminous, and presented a marked contrast with the temporal and anterior regions. The latter impressed me with the idea of arrested development. The insula of Reil, and the convolutions about the fissura Sylvii, were full and well developed. The vessels on the superficies, but especially at the base of the brain, were gorged with livid blood. On carefully slicing down the hemispheres, which were very firm in consistency, the white substance, and more particularly in the anterior lobes, was found to be studded with innumerable small foramina, out of which the blood-vessels were here and there seen issuing; but these channels were much larger than the vessels. Dr. L. Beale was so kind as to examine, under the microscope, portions both of the white and grey cerebral substances, but without being able to detect anything very abnormal in the ultimate structure of either. To the eye, the grey matter was to appearance rather of a lighter colour than usual, and the anterior convolutions were shrunken.

Remarks. It may not be uninteresting to inquire whether anything in the antecedents of the father may have exerted a baneful influence upon the destiny of the daughter. The father inherited the gouty diathesis; and it must be confessed that his habits of life were such as were not calculated to eradicate, but, on the contrary, to perpetuate the hereditary taint. Chorea was the first disease from which the daughter suffered, and is essentially an affection of the nervous system. Coming on as it did about the period of the second dentition, and at a time, as it usually does, when the nutrition of the brain is in a transitional state, it may be fairly inferred, as her brother died of struma and her father was gouty, that in her case there was not only a weakened, but a depraved and abnormal state of nutrition, under which the generation of the nervous force was impaired, and chorea the consequence. The fact of her having suffered from rheumatic fever after scarlatina points to this conclusion; for rheumatism is a blood disease, and the connection between it and chorea is generally known and admitted. There can be as little doubt, in my opinion, that scarlatina and rheumatic fever, following each other, as they did, in such quick succession after chorea, in a constitution like hers, laid the foundation for that state of abnormal nutrition in the brain which ended in the development of epilepsy. In cases like the present, where the disease has been of long duration, and the paroxysms have been both severe and frequent, structural lesions are constantly met with; and, more especially, where the *petit mal* of Esquirol has become of very frequent occurrence. Here the state of atrophy, in which the anterior lobes of the brain were found at the *post-mortem* inspection, not only satisfactorily accounts for her impaired perceptive powers, loss of memory, and weakened intellect, but leads to the belief that had her life been prolonged, with the extended degeneration, imbecility would have been followed, in all probability, by hopeless fatuity. The whole history of her life leads to the belief of the existence of an hereditary taint in her constitution, a contaminated condition of the blood, affecting more especially the nutrition of the brain, first developing the phenomena of chorea, and ultimately those of epilepsy.—*Abridged from Association Medical Journal, 15th June, 1855, p. 558.*

II. STRANGULATED INGUINAL HERNIA TERMINATING IN ARTIFICIAL ANUS. BY S. CHAPLIN, M.D., SURGEON TO THE COUNTY KILDARE INFIRMARY.

MATTHEW BROUGHAM, set. 42, a middle-sized man, a labourer, was admitted into the County Kildare Infirmary on Thursday, the 10th of May, 1855. Patient stated that some time in September last he was engaged in making a stalk of corn, and whilst "heading it," in an effort to catch one of the sheaves which a man on the ground was pitching to him, he suddenly bent his body back, at the same time turning the upper part of it nearly half round; at the moment he felt something give way in his left groin, and on examination discovered a small hard swelling about the size of a hazel nut in this situation. This at first was attended with scarcely any tenderness or pain, and only occasionally, when it became a little larger and more tender, did it give him any annoyance. He says, that though he could at times move it a little about, yet it never altogether disappeared, but he does not recollect whether it was affected by coughing or other muscular efforts. The tumour remained in this condition until the Saturday before admission, on which day, whilst engaged at labouring work, he found it to enlarge and to become exquisitely painful. With difficulty he got home, when, by the advice of the neighbours, he had hot stupes, poultices, &c., applied to it. On Tuesday he observed it again to become suddenly larger, more tender, and soft. Along with these symptoms he was affected with pain about the umbilicus of a "colicky nature," and soon after he observed the tumour to increase and become soft; swelling and tenderness of the belly occurred; he had no vomiting, and his bowels were several times opened by salts, which he took a couple of days before.

State on Admission.—Occupying the left groin is an oblong swelling, about the size of a goose-egg, and having somewhat the appearance of a bubo; it has a dusky brown appearance around the base, but about the size of a crown-piece on the most prominent part of it presents a leadenish hue; it is quite soft and fluctuating, whilst the entire of the abdomen, as high as the navel, and the scrotum of the left side, are affected with oedematous erysipelas. His countenance is sunken and anxious-looking; skin hot and dry; tongue covered with a white fur; pulse 100, feeble; urine scanty; no vomiting; bowels freed this morning. He complains of violent pain in the abdomen, and great tenderness in and around the swelling. He was immediately put to bed and ordered two grains of opium, the latter to be repeated every second hour till sleep was procured; to have arrowroot, beef tea, and wine.

11th.—Got two pills before he went to sleep, then slept for four hours; he took some of the beef tea and wine, and says the sleep has refreshed him very much. The pain in the belly is better, but the soreness in and around the tumour not diminished. On removing the poultice, the slough gave way at its upper part, and from a minute opening, a thinnish brown serum, and air of a most foetid character, issued. The erysipelatous appearance of the abdomen is increased, and the countenance has the same haggard, anxious look as on yesterday; tongue furred, skin hot and dry, pulse quick and weak, bowels not opened since yesterday. A bistoury was now introduced into the aperture, and the tumour completely laid open. A large quantity of brownish-looking serum, mixed with liquid feces, flowed out, whilst air of a most foetid character issued from the wound with a hissing noise. A fermenting poultice was now desired to be applied, and repeated every four hours. Solution of chloride of lime to be sprinkled round the bed, and bark and ammonia were directed to be given every fourth hour; an anodyne at night, and to continue the arrowroot, &c., as yesterday. In the evening he said he felt much better. A good deal of discharge, similar to that of the morning, had come away each time the poultices were changed, and the pain and tenderness of the belly soon much diminished.

12th.—Bowels once opened; motion thin and watery; he feels and appears much the same as yesterday. On removing the poultice, a large, white, and shreddy slough was seen to occupy the fold of the groin, from the centre of which

the discharge (unaltered in character) continued to flow. The swelling of the abdomen and scrotum much diminished, the other symptoms remain unaltered since last visit. As the slough appeared to prevent a free exit for the discharge, it was, to a large extent, carefully removed with scissors and dressing forceps, and along with it a hard lump of feces the size of a marble. There was left behind, parallel with, but for the most part above, Poupart's ligament, an irregular, ill-looking ulcer, about three inches long, and one and a half wide, surrounded with jagged and sloughing edges. This was washed out by means of a syringe, with a dilute solution of chloride of lime. Same treatment to be continued.

14th. Much better; the removal of the slough, by giving free issue to the discharge, has given the patient much relief. He has slept well at night since, and his countenance is improved in appearance; tongue still coated; pulse 92, weak; his bowels have been freed three times, all the motions were thin and fetid, and the last was observed to have some pus mixed with it. The swelling and tenderness of the abdomen and scrotum are nearly gone, and the ulcer appears healthier, the slough having come away altogether from its inferior part. The cavity is now filled with pus of a character similar to that passed by stool.

20th. Patient continues to improve in appearance, and sleeps well. The slough has now completely come away, leaving a deep and irregular ulcer behind, discharging a large quantity of fetid pus (which he also passes with each stool). From the depth and jagged appearance of the ulcer, a correct view of the parts cannot be obtained, but the pus appears to proceed from the internal abdominal ring; the slough has involved the interior boundary of the inguinal canal, leaving the chord partially exposed in the most inferior portion of the sore. The surface of the ulcer around the edges is covered with pale and flabby granulations, partially overlapping its irregular and jagged edges; his tongue is cleaning round the margin; pulse 90, stronger; appetite good; bowels regular; stools still contain pus. Poultrice to be discontinued, the edges of the ulcer and granulations to be touched with caustic, and dry lint, with a thick compress and bandage, to be applied. He is to continue the bark mixture, &c., and to have boiled mutton.

25th. Getting better, each day feels stronger, sleeps well and eats heartily. The discharge from the ulcer is diminished, and much less offensive; pale and flabby granulations cover its surface, and are on a level with the surrounding skin, but the edges are still sharp and undermined. Tongue cleaner, skin natural, pulse 82; bowels regular; stools now contain scarcely any pus. To continue treatment as before.

From this date the patient steadily improved, the ulcer gradually closed, its healing having been retarded by the intractable disposition of the edges; the pus after a little time ceased to appear in the stools, and the patient left the hospital on the 22nd of June, having regained his accustomed health.

Observations.—In this case there are many points of interest to the practical surgeon, not the least of which are its great rarity and favourable termination. From the history which the man gave me of its occurrence and subsequent course, and from the sudden manner with which the erysipelas supervened upon the equally sudden softening of the tumour, as also from the position of the latter, and peculiar appearance of the countenance—notwithstanding the absence of vomiting and constipation—I considered the case as one of strangulated inguinal hernia, and this diagnosis was fully verified by its progress subsequent to admission. The absence of vomiting and constipation may be accounted for by the peculiar nature and position of the strangulation, which I believe to have consisted of a small portion of the sigmoid flexure of the colon, *involving very little of its calibre*; the distance, therefore, intervening between it and the stomach rendered this organ less prone to sympathise with the local affection, and the non-complete occlusion of the bowel made constipation less likely to ensue; besides, the length of time which the protrusion had remained unreduced had accustomed the parts to their unnatural position, and tended, when strangulation did occur, to prevent those symptoms so characteristic of it. The favourable termination of the case was owing, I think, to the very small portion of gut involved

(the size of the neck of the sac being in proportion), and the completeness of the strangulation, which must have further diminished the latter, but chiefly to the pervious condition of the bowel, which permitted its free and natural evacuation, and prevented the accumulation of fæces in the neighbourhood of, and their discharge, for any lengthened period, through the orifice existing between the bowel and abdominal parietes; the margin of this opening, therefore, being unirritated, in a short time yielded to pressure and the application of nitrate of silver; and fæcal fistula, which in such cases usually lasts for life, was but of brief duration, the treatment adopted proving effectual in closing the abnormal opening.—*Dublin Hospital Gazette*, August 15, 1855, p. 213.

III. TREATMENT OF LARYNGITIS BY THE INSUFFLATION OF POWDERED NITRATE OF SILVER. BY M. EBERT.

M. Ebert observes, that every surgeon who has attempted the application of solutions of nitrate of silver to the larynx, must be convinced of its difficulty, if not impossibility. Indeed, he doubts whether the fluid ever reaches that organ at all; and in two cases of croup, in which the attempt was made by a most expert surgeon, he found after death that not a trace had penetrated into the larynx itself. In repeated attempts in the dead body, he has constantly failed to introduce a sponge mounted upon a whalebone, and only after manœuvring, could he get a silver catheter to enter. How much more difficult must it be then during life, when the very attempt stimulates all the neighbouring muscles to resistance.

On the other hand, nitrate of silver in powder may be introduced by the simplest agency. We all know how easily pulverulent substances, drawn in unawares by a deep inspiration, enter the larynx, and give rise to irritating cough. Trousseau was the first to apply this fact to the treatment of laryngeal affections by nitrate of silver; and Professor Burow of Königsberg* speaks very highly of this mode. He mixed three grains of arg. nitr. with one drachm of saccharum lactis, and caused the patient to insufflate daily as much as would lie in the barrel of a steel pen. Chronic laryngitis, which had gone on to the production of complete aphonia, was thus cured in a few weeks. Since he saw this account, M. Ebert has used the same mixture with surprising success in several cases of laryngitis. So minutely does the sugar of milk divide the nitrate, that if even a small portion of the powder only reach the larynx, it will still contain its proportion of the nitrate. He administers it in the following way:—A steel pen, charged with as much powder as it will hold, is attached to one end of the barrel of a quill, which is also open at the other end. This is introduced far enough into the mouth to bring the steel pen opposite the root of the tongue. The lips are now closed around the quill, and the nostrils compressed, while the patient is desired to draw in air rapidly and forcibly through the quill barrel. Almost every one fails at first, but all succeed on the second or third attempt—the cough and irritation of the larynx announcing the penetration of the powder there. Even delicate females and children easily practise the insufflation, and will repeat it for days or weeks together. Young children may have it administered by an apparatus contrived by Professor Burow. M. Ebert has as yet only employed the remedy in laryngitis; and he briefly relates six cases of its successful application.—*Annalen des Charité Krankenhauses*, Band V., p. 89.—*British and Foreign Medico-Chirurgical Review*, July, 1855.

IV. CASE OF CURE OF AN ARTIFICIAL ANUS BY MEANS OF THE SUTURE. BY M. CHAISSAIGNAC.

THE rarity with which the suture has succeeded in curing an artificial anus, unaided by any preliminary or autoplasmic operation, justifies M. Chassaingnac in giving this interesting case in some detail. It occurred in the person of an

* Deutsche Klinik, No. 21, 1863.

employé, aged fifty-one, who had had a very small reducible umbilical hernia for twenty years. In February, 1853, the hernia protruded, with symptoms of strangulation; and after its reduction, a small tumour, situated three centimetres above the umbilicus, and perceived now for the first time, inflamed and presently fluctuated. Towards the end of March this was opened, and fæces discharged; and at the end of some days, a fistulous opening was established, pus and fæcal matters continuing to issue. The odour of these indicated the transverse colon as the part involved. Nutrition continued good, and the passage of the stools was re-established. Whenever this was at all delayed, however, the entire fæces were discharged from the fistula. This condition having persisted for several months, iodine injections were employed every third day, together with pressure on the abdomen. After the seventh injection the cicatrization seemed complete, and the patient was supposed to be cured. About a month later, fever and local inflammation were set up, the fistula reopened, and discharged as before. A partial healing took place, and then a reproduction of the same accidents, so that it was determined to resort to an operation.

An elliptical portion of skin was removed for the purpose of an exact examination of the parts, and a well-defined, rounded aperture was found in the aponeurotic wall formed by the linea alba, through which fæcal matters passed. It was placed at some depth below the surface, and there were lateral diverticula extending between the aponeurosis and the skin. It was now evident that the patient had suffered from one of these small herniæ that obtrude between the fibres of the linea alba, and that the colon, pinched within the edges of these, had sphacelated to a small extent, and then contracted solid adhesions with the edges of the aponeurotic orifice—the subcutaneous detachments establishing a track of several centimetres between this and the cutaneous orifice. The iodine injections were unable to effect a closure of the inflexible edges of the aponeurotic orifice, although they had ameliorated the condition of the subcutaneous diverticula. An autoplasmic operation, allowing this orifice to remain open and discharge matters under the skin, was obviously useless; and M. Chaissaignac succeeded, though with great difficulty, owing to its depth, in paring the edges of the aperture, and traversing it with ligatures, raising it to the level of the cutaneous wound, and attaching it there at each extremity of the ellipsis, the external wound being closed by the quilled suture. The cure was complete, the cicatrization continuing sound when examined a year afterwards.

In commenting upon the case, M. Chaissaignac draws attention to the great difficulties that prevail in the diagnosis of these small *latent epigastric herniæ*, other forms of hernia being always co-existent with them, to which the symptoms of strangulation are naturally referred, and especially when the *embonpoint* of the subject prevents their detection. Without absolutely condemning *iodine injections* in intestinal fistulæ, his experience has not hitherto run in their favour, for, besides their inutility in the present instance, he refers to another case in which their employment was followed by erysipelas and fatal peritonitis.—*Archives Générales*, May, 1855, p. 820.—*British and Foreign Medico-Chirurgical Review*, July, 1855, p. 259.

V.—OVARIOCTOMY SUCCESSFULLY PERFORMED. BY DR. A. MERCIER, SURGEON, CIRCUS STREET HOSPITAL, NEW ORLEANS.

December 17, 1854.—The subject of this case was 28 years of age, and has had four children—the first ten, the last three years since. For the last two years she has been suffering from Ascites, probably dependent upon Ovaritis. One year ago, a swelling was observed in the right iliac region, and her menstruation ceased at that period. In June last she was tapped, and six gallons of a white, thick, albuminous fluid were drawn off. At this time the swelling, which had been observed six months before, was found to have largely increased. It extended from the symphysis pubis to about two inches from the edge of the lower ribs. Palpation of the thin and flabby walls of the abdomen, which

seemed to indicate precisely the location of a head, and still more distinctly of ribs for this tumour, conjoined with the fact that there had been a total absence of pain and of the menses since the first appearance of the swelling, suggested to all who examined her then, as afterwards, the possibility of this being a case of extra-uterine pregnancy. The diagnosis evidently lay between this possibility and the greater probability, in consequence of its far greater frequency, and the absence of positive testimony, of an ovarian tumour. Whether the one or the other, Dr. Mercier advised its removal at once. His advice was not acted upon. The effusion rapidly reaccumulated, and she was tapped six times between June and December 17th, and each time from five to six gallons of liquid were drawn off. The total was about thirty-five gallons during the six months.

Preparatory to the extraction of the tumour, which she had finally determined to have removed, though life should prove the forfeit, she was tapped on the 16th December. Her condition for the operation was favourable in every respect, except that she was anæmic and debilitated. Delay was calculated rather to increase than decrease this contra-indication. It was therefore determined to operate at once. At five o'clock p.m., on the 17th, she was subjected to the influence of chloroform. An incision, nine inches in length, was made over the tumour, extending from the lower ribs to the external edge of the rectus abdominalis. Two small muscular arteries were tied during the course of the incision, and but little blood was lost, either then or subsequently. With some difficulty the adhesions which bound the tumour to the abdominal parietes, the liver, the iliac fossa, and to the omentum, were torn apart with the hand, the intestines, &c., being freely handled for this purpose. Near the pedicle of the tumour the adhesions were so strong, for more than an inch in extent, that the bistoury had to be resorted to. The tumour presented the appearance externally of an enlarged ovary, and such was its size, that, in order to draw it out of the abdominal cavity, several deep incisions had first to be made into it, and a large portion of its fluid contents to be evacuated. Strong thick twine was then tied as forcibly as possible around the pedicle of the tumour, and it was excised about half an inch above the ligature. The internal parts were freely sponged, and the lips of the wound brought together with five sutures, which included all the parts incised—the peritoneum, muscles, and integument. The lips of the wound were further approximated with adhesive straps, and covered simply with lint. Openings were left, sufficiently large to admit a ready egress to any fluid contents of the abdomen. The tumour, when extracted, measured nine inches in length, and six in diameter. Its weight could not have been less than six pounds. It was of a fibro-cartilaginous character, and composed of a mass of small conglomerated cysts of various sizes, containing a fluid of the colour and consistency of glycerine.

The patient was enjoined to lie inclined as much as possible on the right side, a stimulant was administered, and a mixture *Tr. Arnica* and *Syr. Morph.* prescribed. Nausea and vomiting were excited by the mixture, and no rest was obtained during the first night. The following day her condition was decidedly unfavourable. Her pulse was so weak and rapid that it could not be counted, and she complained of much pain in the left iliac region. The mixture was laid aside, and beef tea administered. The second night was also passed restlessly, and the pain had increased. On the third day an enema was administered, which was followed by an evacuation, affording immediate relief to the pain, since which time there have been no symptoms of peritonitis. *Tr. arnica* and morphine were again administered, and a table-spoonful of beef tea every hour.

On the third night, the patient for the first time enjoyed a sound and refreshing sleep, and, the fourth day found her condition much improved in every particular. Since this time she has not presented a single untoward symptom, and each day has found her better than the previous one, under the simple treatment of a nourishing diet. By the seventh day the muscular portions of the wound had united, except opposite to the sutures. On the thirteenth day the ligature came away, and from this period the flow of serum through the wound, which at first had been considerable, has rapidly decreased.

At the present time, January 3, 1855, seventeen days after the operation, the patient may fairly be considered to have recovered from the injurious effects of the operation. Her pulse has improved much in strength and regularity, and diminished in frequency to about ninety in a minute. Her appetite is good; her evacuations, both fecal and urinary, are natural and regular; her rest is unbroken, and her countenance is a picture of gratitude and cheerfulness. The wound has almost entirely healed, and she is sitting up.

Ovariectomy was first performed in France, in 1776, and from that day up to the present time, it, as everything else medical, has had its opponents and its advocates. The practicability of the operation long since ceased to be problematical. Four years is the period assigned as the limit within which ovarian tumours naturally result in death; and statistics of this operation show a mortality of about one in three. An analysis of eighty-one operations for this disease gives the following results:—In 15 cases extirpation was impracticable, in consequence of adhesions; in 5 cases there was no tumour; and in 6 the tumours were not ovarian. Death was the result of the operation in 6 cases of the 15 in which the tumour was not extracted. Of the 81 cases, only 61 tumours were extracted, of which 6 were not, and 55 were ovarian tumours. Of these 61 cases, 35 recovered, and 26 died. The result in the entire 81 cases was 32 deaths and 49 recoveries. More favourable statistics than these cannot be found. The same question as to the propriety of operating for this disease arises as for some other diseases. On the one hand is certain death within a limited period, with more or less suffering in the interval; on the other, speedy death is probable, but a prolongation of life still more probable. The decision may properly be left to the discretion of the patient, without necessitating surgeons to resort to a long ethical discussion.—*New Orleans Med. and Sur. Jour.*, Jan., 1855, p. 518.

VI. RESECTION OF THE HEAD OF THE HUMERUS. BY W. A. GREEN, M.D., BENGAL MEDICAL SERVICE.

A NATIVE, age about 37 years, his occupation that of Kalashee on board ship, applied at the Howrah Native Hospital, at the end of the year 1837, with disease of the left shoulder joint, of a year's existence. He had been obliged to leave his ship in consequence of the disease. The account he gives of the commencement of the disease is, that for two months he experienced severe pain in the shoulder joint; that he knows of no cause of the disease; that then several small swellings appeared over the joint, at the seats of the present sinuses, and burst, and discharged a thin pus. The man's symptoms, when he presented himself, were as follow:—

A considerable, hard, and tender swelling of the soft parts around the joint; there were several sinuses discharging a thin discoloured pus, opening, some beneath the coracoid process, some in the arm at the inferior margin of the pectoralis major; the pain in the joint unremitting and excruciating; great general distress, sleepless nights. As he had failed to obtain relief from me, and also from the remedies administered to him at the different Calcutta dispensaries, I recommended excision of the diseased parts of the joint, whether of the humerus or scapula, or of both. The operation consisted in grasping the deltoid muscle, passing beneath the muscle, close to the bone, a double-edged sharp-pointed knife, and cutting outward through the muscle, then dissecting it upwards and backwards, to expose the shoulder joint; the capsule of the joint was then cut into, the elbow brought forward upon chest, and the head of the bone dislocated, the tendons of the spinati, subscapularis, and teres minor muscles divided, and the head of the humerus, inferiorly to the tubercles, sawn off—great care being taken to protect the soft parts, and perfect command being kept over the blood-vessels, during the sawing through the bone, in which I was most ably assisted by Dr. Goodeve and Mr. R. O'Shaughnessy. The loss of blood was trifling. The joint was found to contain a thin dirty pus, and the interior of the joint communicated with a large abscess situated in the soft parts of the axilla. The

glenoid cavity with its cartilage were free from disease. The disease in the head of the humerus occupied a small extent of parts at the anatomical neck of the bone; the cartilage was there found ulcerated, and the bone beneath it carious. There was very little interference made with the morbid soft parts; the divided parts were brought together, a pad put into the axilla, and the arm confined to the side. The old sinuses remained open and discharging for some months, but the man experienced no pain in the joint or parts around, after the healing of the wound of the operation. By the end of a year after date of the operation, the sinuses had all healed.

Now, after the expiration of more than three years from the date of the operation, he has a very useful arm. He possesses a good use of his forearm; can flex the forearm upon the arm perfectly; can feed himself with it, he can lift and carry weights, carrying them perpendicularly with the arms; has some power of rotating the humerus; can draw it backwards and forwards again to a slight degree. The power of the deltoid is gone; he cannot abduct the arm from the side, nor raise it towards the horizontal position. The muscles of the scapula and the deltoid are much shrunk, and two indents mark the lines of the incisions of the operation. There does not appear to be a new joint formed; the sawn end of the humerus appears merely to have become rounded off.—*Indian Annals of Medical Science, April, 1855.*

VII. MEDULLARY FUNGUS OF THE HUMERUS, SPRINGING FROM THE INTERIOR OF THE HEAD OF THE BONE. AMPUTATION AT THE SHOULDER JOINT. REPORTED BY OMESH CHUNDER MITTER, SUB-ASSISTANT SURGEON.

NEESTARINY, aged about 50, Hindoo female, milkwoman by occupation, inhabitant of Shampore Bagoorda, a village in the district of Dacca, of thin habit of body, had been a widow at the age of fourteen, commenced to menstruate at the age of thirteen, and was regular up to the age of forty. Menstruation ceased about ten years ago; admitted into the dispensary, 24th January, 1855, on account of a tumor situated over the upper part of the left arm. She states that, about six months ago, she perceived a circumscribed painful swelling over the upper part of her left arm; since that time it has gradually enlarged and attained its present size.

Symptoms on admission.—The tumor is of an irregular oval form, occupies the upper portion of the left arm, from the acromion process of the scapula to the middle of the arm; it is hard and nodulated below, and soft above. There is distinct fluctuation on its upper surface. It is immoveable, and appears to be connected with the bone; the skin covering it is discoloured, and handling occasions severe pain. Complaints of constant pain in the tumor, has no sleep nor rest on account of it; the arm is swollen down to the elbow-joint; sensibility of the forearm and hand is much diminished; cannot lift any object from the earth, nor grasp anything firmly with her fingers; pulse soft and weak; appetite good, and bowels open. The tumor measures fifteen inches and one-fourth from the acromion process to the middle of the arm, and two feet and five inches round the arm.

The operation was performed by Dr. Green, on the 28th January, 1855, insensibility having been produced by chloroform. The tumor felt soft and fluctuating above, and at the sides close up to the shoulder joint, beneath in the axilla it felt hard; the integuments at the superior surface were of a dark discoloured appearance. It being evident that a flap could not be formed of the deltoid muscle, which had become implicated in the diseased mass, flaps were formed from the front and back aspects of the shoulder. The subclavian artery was ably controlled by pressure upon the vessel in its course over the first rib; the upper extremity of the humerus was dissected out from under the acromion process, where it had spread itself out, and the arm removed. A great deal of venous bleeding ensued, owing to the increased circulation about the part.

The glenoid cavity appeared to be smooth and healthy; the acromion and coracoid processes were prominent, softened, and diseased; the extremities of these were sawn off, in order to diminish the projections to be covered by the flaps, which were necessarily scanty, in consequence of the diseased condition of the integuments in the close neighbourhood of the tumor. The flaps were then brought together by sutures, and the wound bound up. Two ligatures only were applied.

Upon examination of the disease, the cellular and adipose tissues of the shoulder and arm were found cedematous, the muscular fibres in connection of a pale colour. The tumor was found to consist of a large sac, out of which, upon dividing it, escaped a large quantity of thick grumous coffee-grounds-like contents; upon laying open the tumor it fell apart, and seemed to be made up of brittle, blood-stained, condensed cellular structure, of a fungous character; through this mass were interspersed small plates and spiculae of bone, as if consisting of fragments of the expanded shell of the head of the humerus, carried forward by the spread of the morbid contents of the tumor. The head of the humerus, and a portion of the upper part of the shaft of the bone, had been hollowed out and expanded into a shell, the cancellous plates being widely separated, whence issued the disease, a small part only of the articular end of the bone was covered with cartilage; from parts of the head, rough ridges and spiculae of bone projected. The expanded shell of the end of the bone had been absorbed in different directions, and so was loose and disconnected; where the fluid tumor had sprung forth, there was a great gap in the shell of the bone.

She has been treated by the internal administration of stimulants and anodynes at first, and then by tonics and generous diet, and by the external application of cold water dressing and adhesive plasters. The sutures were removed on the 5th day. The wound healed rapidly, and she left the hospital on the 22nd February, 1855, with a very small part of the edges of the flaps at the lower part of the stump remaining ununited. She walked away from the dispensary sooner than was probably advisable, having been called away by tidings from her home.—*Indian Annals of Medical Science*, April, 1855.

VIII. CASE OF ACUTE TRAUMATIC TETANUS TERMINATING FAVOURABLY. BY D. SINCLAIR SMITH, ESQ., H. M. 81ST REGIMENT.

THE patient, a punkah cooly, was admitted into the hospital of H. M.'s 81st Regiment, on the morning of the 22nd May, having received a gunshot wound a few hours before, while employed in pulling a punkah in the 81st Barracks. On examination, a wound about the size of a two anna piece was found to exist on the inner aspect of the thigh, at about the junction of its middle and lower third. On introducing a probe, the course of the ball could be traced upwards in the direction of the femoral vessels, and on their external aspect the ball could not be felt, and there was little hæmorrhage. Cold water to the wound.

24th.—Complained of pain at a spot about $1\frac{1}{2}$ inches below Poupart's ligament, evidently depending upon some irritation in the course of the sinus. On examination with the long probe, the ball was felt in the situation where the pain was complained of; the point of the probe was held over it, and an incision made upon it, but from a sudden jerk given by the patient during the operation, the probe was displaced, and although, after the incision was completed, it could be felt in the bottom of the wound, the ball could not again be detected.

28th.—The inferior wound is healing, and a healthy discharge from the incision; he is free from the pain complained of at last report.

29th.—Arterial hæmorrhage from the incision to the extent of about $\frac{3}{4}$ iv., checked by the introduction of a small piece of sponge and a bandage. Cold applications, saline treatment, and pressure.

June 3rd.—The small piece of sponge was removed, and was followed by about $\frac{3}{4}$ ss. of sanguineo-purulent fluid. Sol. zinci. to the wounds.

4th.—Last night slight tetanic spasms were felt about the jaws, chest, and superior extremities. Both the wounds look well, bowels constipated. One drop croton oil, and five grains extract of hyosciamus.

5th.—Had tetanic spasms almost constantly during the night. His appearance is strongly expressive of the peculiar nature of his complaint; the jaws are firmly shut, the angles of his lips retracted; the muscles of the neck are rigid, and, at intervals of short duration, the spasmodic action extends to the back of the neck, back, and thighs; complains of pain and tightness under the ensiform cartilage during the paroxysms, and the muscles of the abdomen are firmly retracted and hard. His pulse is unaffected, except during a severe paroxysm, when it becomes slightly accelerated. Has not taken any food for two days, bowels have been freely moved during the night. Wounds of a pale colour, and the discharge from them thin and watery. Chloroform to be inhaled twice a day. To have ʒi. of the powdered leaves of the Indian hemp every two hours. Fomentations to wounds.

6th.—The spasms were relieved after each inhalation of the chloroform for about ten or fifteen minutes, after which they returned with their former severity; is unable to take food, and seems much exhausted, bowels freely moved. To have ℥. xx., chloroform in solution every two hours.

7th.—No change in his symptoms. After the influence of the chloroform was over, he was able to open his jaws a little and drink some milk; seems weaker; pulse 98, small and weak; bowels regular.

9th.—The spasms since last report have been violent and severe. During the intervals of relaxation which succeed the inhalations of chloroform, he has been able to drink about two pints of milk. He does not seem so weak as at last report.

11th.—Continues in the same condition. The leaves of the Indian hemp have not been followed by any visible improvement; bowels regular.

13th.—No change to report. Omit the leaves of the Indian hemp. Gr. v. of "churrus" to be smoked every two hours. Chloroform as before.

14th.—States that he felt some relief from the smoking yesterday; the spasms, however, do not appear to have in the least abated; slept a little during last night; continues to take his nourishment; bowels regulated by purgatives.

17th.—Had a longer interval of relaxation after the inhalation of chloroform this morning; continues to take the milk with a good allowance of rice. The principal effects of the churrus appear to be a dull state of stupidity, which is preceded by slight excitement with injection of the conjunctiva. Apparently the spasms are less intense when he is under the full influence of the medicine.

19th.—Was much relieved and slept well after an opiate last night. The periods of the recurrence of the spasms after the chloroform seem longer, and the intensity of the muscular contraction much less. The eyes were more injected from the effects of the churrus than they have been for the last few days, and, except when under its influence, he is disposed to be restless and irritable.

21st.—Is much improved; slept well during the night, and only suffers from the spasms in a mild form. Is now able to protrude the tip of his tongue between the teeth; has no pain at the epigastrium or abdominal hardness. The irritability noticed in last report continues. Omit churrus. Chloroform, &c., as before.

22nd.—Going on well. The spasms seem to be more severe on the left side of the trunk, and in the lower extremities, than elsewhere; continues to take his nourishment twice a day after the chloroform. Bowels regular. Continue medicine. Large blister over vertebræ.

27th.—Doing well; almost completely free from spasms, except upon exposure to slight excitement; as, for example, during the hour of visit, when he suffered from what appeared to be a rigid condition of the muscles of the trunk and extremities. Chloroform omitted on 24th.

July 6th.—Is now quite well.

20th.—He continues perfectly well, and free from any symptoms of his late illness.

Remarks.—In the treatment of this case, advantage has been taken of the suggestions published almost since the first introduction of chloroform, of its efficacy in subduing the violent spasms peculiar to this disease; also, of the results of the treatment by the use of Indian hemp, administered alone, or in combination with chloroform. The latter treatment having appeared to me to be more satisfactory than any yet published, I was led to adopt it in this case, not, however, under very favourable circumstances, in consequence of the impossibility of obtaining in the station any of the extract of the Indian hemp. Under these circumstances, I employed the powdered leaves obtained at the bazar as the best substitute I could think of, until, at the suggestion of Dr. Row, superintending surgeon, the substance called churru, the resinous exudation from the leaves of the Indian hemp, was employed instead. The use of this substance was undoubtedly followed with benefit; but, in addition to its powerful narcotic effects, a stimulating action was always observed to precede them, and they were followed by a state of irritability and sleeplessness, which appeared to do away with much of the good effects of the remedy. At this period of his treatment, large doses of opium were employed, principally with a view to remove the restlessness and procure sleep. The result was fortunate, and they were continued till the complete cessation of the spasms. The internal use of chloroform as an antispasmodic, from its well-known value, was employed throughout the whole treatment of the case. Formerly, in the treatment of tetanus, one great difficulty to be encountered was the introduction of nourishment into the system. The benefit of chloroform rendered this easily attainable from the commencement of his treatment, and tended much, I feel confident, to promote the favourable issue of the case. From the pathology of eccentric tetanus, and the supposed absence of spinal inflammatory action in such cases, a treatment conducted principally with a view to overcoming the spasmodic muscular action, afterwards restoring the tranquillity of the system and producing sleep, with a good supply of nourishment from the commencement, and attention to the secretions, appears most likely to be attended with favourable results.—*Abridged from Indian Annals of Medical Science, April, 1855.*

IX.—TETANUS CONSEQUENT ON A LACERATED WOUND. BY
BABOO DYAL CHURN BYSACK, SUB-ASSISTANT SURGEON,
OOTERPARAH DISPENSARY.

BACHARAM GHORHUO, a tall man of slender make and bilious temperament, an inhabitant of Kassegorah, Zillah Midnapore, aged 42, was admitted on the 14th February, 1853, with a severe lacerated wound, tearing the sole of his right foot from the heel up to its anterior third, and exposing the deep muscles, attended with copious venous oozing, caused by that part of the foot being crushed between two boats. The edges of the wound were kept in opposition by sutures, soap plasters, and bandages, over which cold water dressing was applied.

16th Feb, 1853.—Wound has assumed an inflamed character; the edges are gaping and discharging sero-purulent and sanious matter; pain shooting along the leg, surrounding parts hard and swollen, pulse quick, skin dry, tongue white, bowels confined. Ordered a dose of *ol. ricini* ʒi. immediately, and two fever powders in the afternoon. Tepid water dressing for the wound, the leg to be kept in an elevated posture.

22d.—The patient is still suffering from irritative fever, which comes on daily in the afternoon and passes off in the morning. The wound has assumed a sloughy character, its surface divested of granulations, looks brownish grey, and pours forth an abundance of dark offensive discharge and putrid debris. Surrounding parts enormously swollen, and pain shooting along the limb. Ordered saline diaphoretic mixture during paroxysm, and quinine powders during remission. Nitric acid applied freely to the mortified part. Bark and charcoal poultices and chloride of lime solution sprinkled over the bandages.

27th.—Gets little or no fever in the afternoon, sloughs half begun to separate,

granulations are shooting from the bottom of the ulcer; discharge much improved in its character, surrounding swelling and hardness much reduced. In short, the ulcer has assumed a healthy character. Ordered decoct. cinchonæ, acid. nitric dil. quina. disulph., three times a day. Dil. nitric acid wash 3j. to a pint every morning, poultices continued.

29th.—Since last night he has felt slight stiffness of the neck, and difficulty in opening the jaws widely; the masseter and sternomastoid muscles are rather prominent and slightly rigid. Ulcer improved in its character. Ordered ol. ricini and turpentine. Tinct. cannabis mixture every three hours after purgation. Poultices and wash continued for the ulcer.

1st March.—Complains of pain behind the ensiform cartilage; abdomen rather hard and tense; neck more stiff; masseter, sternomastoid, and other muscles of the neck are more rigid and prominent; deglutition greatly impaired; cannot swallow solid food. Ordered warm bath and tinct. hemp every other hour, and smoking of its extract with tobacco.

2nd.—Neck is drawn a little backwards; sternomastoid, thyro-hyoid, masseter, trapezius, and other muscles of the neck and jaw are stiff and rigidly contracted; abdomen hard and tense as a board. 5 P. M. muscles of the spine, chest, and abdomen are all affected. Deglutition greatly impeded; can swallow only half a seer of milk during the whole day, made into a very thin paste with boiled rice. Ordered by Dr. Macrae, quinae gr. vi., morphia gr. $\frac{1}{2}$ every six hours, chloroform friction over the stiff muscles thrice a day, warm bath and chloroform inhalation twice a day.

3rd.—All the muscles of the trunk are severely affected with convulsive rigid contractions; complains of severe pain on the pit of the stomach and back; neck drawn backwards. Spine bent and hollowed posteriorly, so that the patient rests on his occiput and heels. Cannot swallow more than half an ounce of milk at a time, and the least attempt to do so brings on rigid muscular convulsive agitations; countenance pinched, angles of the mouth drawn a little upwards and outwards, which gives a peculiar grimace to the countenance. Speech is also greatly affected. Continue warm bath; chloroform friction thrice and inhalation once a day; morphia gr. ss. and quinae gr. v., every four hours. Turpentine injection occasionally to move the bowels. Local application to the ulcer continued.

7th.—The patient seems more exhausted and worn-out from continued suffering, fatigue, and want of proper nourishment and rest. Ordered warm bath twice a day. Chloroform friction thrice and inhalation twice. Ext. belladonnæ gr. $\frac{1}{2}$, hemp gr. ss., morphia gr. $\frac{1}{2}$, three to four times a day. Turpentine injection every morning, poultices, &c., to the ulcer continued.

12th.—Tetanic convulsions not so frequent, whole body seems to be equally affected with rigidity of muscular system. Deglutition evidently improved.

15th.—Whole body continues stiff and rigid, convulsive tetanic spasms less frequent, but they increase during the night, and prevent the patient from falling asleep. The difficulty of deglutition and affection of the muscles of the neck are much relieved. Medicines continued.

19th.—Can swallow with ease a paste made of rice-pudding and milk; sleeps for more than four hours during the night. Lower extremities continue more severely affected than the rest of the body. Ordered cinchonæ gr. vi., quinae gr. ii., ferri carb. gr. iv., pulv. aromat. gr. iii., three times a day. Belladonnae and hemp during the night. Injection and the local application to the ulcer continued.

3d April.—He gradually improved under this plan of treatment, and was discharged perfectly cured on the 2d April, 1853.—*Abridged from Indian Annals of Medical Science, April, 1855.*

MEDICAL INTELLIGENCE.

1. *Quarterly Report of the State of Disease in the Glasgow Royal Infirmary.*—During the past quarter, extending from 20th June to 20th September, the total number of patients admitted was 719; of these 559 were ordinary medical and surgical cases, and 160 fever. The number of patients dismissed cured or relieved from the medical and surgical wards was 527, and the number of deaths was 47. In the fever wards, the number dismissed cured was 153, and the number of deaths was 23. The number of accident cases was 139.

The following is a resumé of the principal operations during the quarter:—

I. *AMPUTATIONS.*—1. *Of the Upper Extremity, at the Shoulder-Joint.*—J. M., aged 23, was admitted with extensive laceration of hand and arm; the arm was removed at the shoulder-joint, and the patient recovered.

A. W., aged 44, was admitted with compound fracture of the humerus; an attempt was made to save the arm, which did not succeed, and though the patient was in an unfavourable condition, it was determined to remove the arm, which was done at the shoulder-joint; the symptoms of phlebitis which had shown themselves before the operation continued to increase, and death ensued.

2. *Of Fore-Arm.*—J. S., aged 19, was admitted with extensive laceration of hand; amputation was performed above the wrist-joint, and he recovered.

D. F., aged 48, was admitted with caries of the bones of the hand, and disease of radius and ulna; amputation was performed at the middle of the fore-arm, and he recovered.

3. *Of the Lower Extremity—the Thigh.*—M. A. J., aged 11, was admitted with strumous disease of the knee-joint; amputation was performed above the knee, and she recovered.

4. *Of the Leg and Foot.*—J. J., aged 18, was admitted with caries of the bones of the tarsus; the foot was removed, and he recovered.

W. W., aged 18, was admitted with smash of foot; amputation was performed at the lower third of the leg; phlebitis supervened, and he died.

W. S., aged 19, was admitted with caries of the bones of the foot; amputation was performed at the ankle-joint, and he is doing well.

W. F., aged 20, was admitted with caries of the bones of the foot; removal at the ankle-joint was performed, and he recovered.

C. C., aged 24, was admitted with smash of foot; amputation was performed above the ankle-joint; phlebitis occurred, and the patient died.

J. B., aged 40, was admitted with caries of the bones of the foot. The foot was removed at the ankle-joint, and he is doing well.

R. M. N., aged 17, was admitted with congenital malformation of the right leg, the lower portion being at right angles to the limb; amputation was performed below the knee. He is still under treatment.

II. *EXCISIONS.*—1. *Of Joints—the Ankle-Joint.*—M. R., aged 18, was admitted with caries and ulceration of the cartilages of the ankle-joint. It was determined to excise the diseased parts, which was accordingly done. This patient is still under treatment.

The case of excision of the knee-joint is now nearly well.

2. *Of Part of the Lower Maxilla.*—P. S., aged 40, was admitted with a fungous growth connected with the lower maxilla; the portion of the bone from which the growth proceeded was removed, and the patient recovered.

3. *Of Tumours.*—There were several cases of this kind, in which tumours of different kinds were removed with success.

4. *Of Necrosed Bone.*—There were also some cases of this kind, which are not of sufficient interest to require to be specified.

III. *LITHOTOMY.*—There were two cases; one successful, and one unsuccessful.

T. R., aged 34, had symptoms of calculus for 7 months. The usual lateral operation was performed, and he recovered without an unfavourable symptom.

J. S., aged 19, was admitted with calculus in the bladder; the symptoms had continued for 6 or 7 years. Shortly after the operation, symptoms of an unfavourable kind presented themselves, and the patient speedily sunk.

IV. HERNIOTOMY.—There was one case which was successful.

J. J., aged 1, was admitted with strangulated inguinal hernia; the stricture was relieved by operation, and the patient recovered.

2. *Wounded at Balaklava*.—The French Intendant here, having asked me if I would accept of 100 francs to take charge of 406 sick and wounded to Constantinople, I agreed, it being only two days' sail from Kamiesch; so, on Tuesday the 24th April, five barges came alongside filled with the poor fellows, the very first sight of whom told me I would have my hands full. Of this number about 250 were wounded; the remainder had fever, diarrhoea, scurvy, and exhaustion: those worst wounded were slung on board in chairs and stretchers, and the sight of the 'tween decks, strewn with these poor fellows lying in all positions, on chaff and sacks, with their knapsacks under their heads for their pillows, and death, pain, and despair pictured on many of their faces, will never be rooted out of my memory. Some were actually in a dying state when brought on board, and as the wounds of all had not been dressed for some days, the stench was dreadful. This day was devoted to stretching them on their temporary couches, and as most of them could not walk to perform the calls of nature, I made *cloacæ* of the horse-troughs, and they answered admirably. Four hospital men, or *Infirmiers* as they are called, were all that were sent on board to look after 406, so you may fancy what I had to do. One young man was brought on board, having undergone amputation at the upper third of the thigh, *with the stump gaping open*. I immediately brought the flap together again, and bandaged his limb; he was delirious, and died next morning. Another, with his leg amputated and far gone, was found dead next morning. Another, having a ball entering at the forehead, and out at the back of the head, died next morning; and two more from fever and exhaustion. By great exertion, and undergoing an immense amount of fatigue, having had to dress a great number where they lay, I dressed them all in these two days, and prescribed for those labouring under fever and diarrhoea. I received much assistance from Mr. Alexander, till he was fairly obliged to give in from exhaustion and the stench. Capt. Cumming kindly allowed me to give tea, coffee, wine, and cordials to those most in need of such; and nourishing soup was administered to all, and they were made as comfortable as circumstances would permit, our anxiety being to get them conveyed down to Constantinople as quickly as possible; and I told the engineer quietly, to put on all the steam he could to effect this. Fifteen had undergone amputation of the leg and thigh; two of them were in such a state as to require amputation higher up. One of them, a young lad of 18, had, in a sortie one evening, been mistaken for a Russian by his comrades, and 7 balls poured into his leg below the knee, and one through his left breast. He had the courage of a hero. From the right thigh of another, a little above the knee, I extracted a flattened ball, which had lain there several days, and which, he said, his own surgeon at Kamiesch could not find. It had glanced off some hard substance, and entered his thigh edgeways. I have it with me. Eleven had suffered amputation of the arm and forearm; these were all in a way to do well. Many were shot through and through the body and limbs; of course, not in vital parts. One shot through the left lung, and out through the scapula. Eight wanted thumbs and fingers; these had been badly amputated; on inquiry, I was told they had been done by pupils. Twenty-one were wounded in the head and face; the wounds of the face being particularly severe. In four of these, part of the nose, tongue, palate, and cheek had been torn away by fragments of shell. These men could neither speak, eat, nor drink. I had to lay them on their back, and pour water and soup down their throat by means of a flexible tube; they were by far the most difficult wounds to dress, as well as the most appalling to look upon. In five, the bones of the arm and thigh had been broken by musket shot; fourteen were wounded on the feet, nine of whom suffered amputation; only one sabre-cut among

them all, and that was on the scalp, doing well. Limejuice was administered to those labouring under scurvy. I used the cold water dressing, and simple ointment in all, doing away with the great amount of thread clippings which the French surgeons clap on their wounded; in my opinion, confining the wounds too much, and at the same time excluding a sufficient amount of air. Some wounds were dressed with a thick sort of muslin, spread with something like basilicon ointment, or, I should say, soaked with a thin solution of the above. This, snipped with many small holes, made a very clean dressing. I never saw it before. The deaths amounted to ten, which is a low rate of mortality, considering the state the men were in when brought on board. I must strongly condemn the manner in which their sick and wounded were sent on board; only four Infirmities to attend them, and no medical or surgical appliance furnished. I had to use my own supplies. They were all landed on Friday at Constantinople, and the poor fellows, who bore their dressing without a murmur, all thanked me for what I had done for them; and I can assure you, it is a source of much gratification to me that I was enabled to do my duty by them. The ship was again thoroughly washed out and fumigated, and we are quite healthy. The "City of Manchester," however, carrying sick and wounded like ourselves, had nine of her officers and crew laid up with fever, and when we left Constantinople, one had died in hospital there. On Saturday the 28th, I went across to Scutari, visited and went through the hospital. It is orderly and clean, thanks to Miss Nightingale. I sent in my card to this lady, and she sent for me, made me sit down, and we had a long talk; she asked all about the sick and wounded I had brought down, how they were getting on at Kamiesch and Balaklava, &c. She told me that there were few British wounded at Scutari, and the general sickness was on the decline. Miss Florence Nightingale is of a staid and most lady-like deportment, serious and thoughtful, slender, and about 30, I should think. The soldiers here quite adore her. The prevailing sickness was fever and diarrhoea.—*Private Letter from a Surgeon.*

3. *The Civil Hospital in the Dardanelles.*—In the early part of the present year, when it became obvious that the hospital accommodation provided for the British army in the East was totally inadequate, and that the army medical staff was unable to cope with the exigencies of the war, the government tardily resolved to meet the emergency by the establishment of hospitals under the entire management of civilians. Accordingly, in the month of February, a staff was organized to be stationed at Smyrna, where the Turkish government had placed a barrack at the disposal of the English authorities. This staff consisted of a medical superintendent, three physicians, six assistant physicians, five surgeons, ten assistant surgeons, and a resident medical officer, together with a very ample complement of lady nurses, paid nurses, and orderlies. The barrack at Smyrna is situated close to the sea, to the extreme west of the town. It is a substantial three-storied building, forming a square, open to the shore. The wards are in part long corridors, only one side of which is occupied by beds, and in part rooms of various sizes, entering from these corridors. It is at present in an admirable state of efficiency and cleanliness. It has accommodation for 520 patients, but for some time past has been nearly empty. About 2½ miles from the hospital is the lazaretto, capable of containing 400 men, and to which convalescents are sent for a short time before returning to active service. When Smyrna was fixed upon as an hospital station, the experiment was regarded by those well informed on the subject as a dangerous one, the climate being generally regarded as unhealthy. Experience has not yet fully proved the correctness or incorrectness of the prevalent opinion. The heat during summer is very intense, the thermometer reaching 98° in the shade. An advantage possessed by Smyrna over some of the Eastern hospitals is, the facility with which supplies and articles of luxury, as well as labour, can be procured. A disadvantage, and no slight one where soldiers are concerned, is the facility with which spirituous liquors are obtainable. It is a curious episode in the history of the war, that, for a considerable time, the medical staff were confined within the walls of this, the second city in the Turkish dominions, owing to the lawless state of the sur-

rounding country. It was in contemplation at one time to extend the hospital accommodation at Smyrna, by the erection of wooden huts for 500 men. Circumstances have, however, induced the government, in our opinion wisely, to change their plans, and it is doubtful whether the hospital will be again employed, except as a depot for convalescents.

The second civil hospital in the East was placed under the superintendence of Dr. Parkes, to whom, in conjunction with Mr. Brunton, C.E., was intrusted the task of selecting a site. It was thought desirable that this should be on the shores of the Bosphorus; but a careful survey of that sea, and of other localities in the neighbourhood of Constantinople, such as the Princes' Islands, failed to discover an eligible position. Eventually, an admirable site was selected on the shores of the Dardanelles, about a mile and a half from the village of Renkioi, and about seven from the town of the Dardanelles. The ground selected consists of a very level piece of land projecting into the sea, with a bay on either side, so that there is a constant exposure to the prevalent winds, and a safe anchorage, from whatever direction the breeze may blow. The hospital huts to be erected on this site were designed by Mr. Bennet, and the woodwork and all the appurtenances sent out from England. In the month of May the work was commenced, and, notwithstanding many delays and disadvantages arising from circumstances beyond control, there will be, by the time this appears in print, accommodation for at least 1000 men. The huts are placed parallel to the straits, in two lines, the interval between those of the eastmost line being greater than that between the other. A covered corridor connects the two rows. Each hut is 101 feet long, and 40 feet in breadth. It is divided down the centre by a partial partition, similar to that in the sheds of the Glasgow Royal Infirmary. The walls are whitewashed externally and internally, and the roof covered with felt, over which again is a layer of highly polished tin; the object of which is, by reflecting the sun's rays, to diminish the heat. There is also a very ingenious contrivance for ventilating the huts by means of wooden tubes placed beneath the flooring, in which there are communicating apertures. At one end of the huts are rooms for the orderlies and the medical officer, and baths, and at the other, admirable privies and lavatories. In short, the arrangements made for the comfort of the patients, and for the maintenance of cleanliness, and of a due supply of pure air, are perfect. Each hut contains 50 beds, and the entire charge of it is committed to one medical officer. The dispensaries and other offices are complete and commodious. The kitchens and wash-houses are of corrugated iron. The medical staff consists, in addition to the superintendent, of 24 physicians and surgeons. Three of these are senior to the others, and have each the supervision of a division of 10 huts, or 500 patients; the accommodation for which the present staff was nominated, amounting to 1500 men. The residences of the staff are wooden houses situated at some distance from the sea, but in the line of the huts, and a large mess-house for their use has also been erected. The remaining buildings of this colony are houses for the nurses, orderlies, and for stores. A very important element in selecting an hospital site is the quantity and quality of the water. From springs on the hills behind the Renkioi hospital, an abundant supply of pure water has been obtained. The salubrity of the locality is generally acknowledged by residents; and the experience of the last four months, during which English artisans have been working for twelve hours daily, often under a powerful sun (the thermometer in the shade ranging from 81° to 95°), confirms the information derived from other sources. The supplies are principally obtained from the town of the Dardanelles; but poultry is abundant in the neighbourhood. Vegetables are procured from the plains of Troy, distant about 7 miles. The great disadvantage of the site is undoubtedly its distance from the seat of war. The average passage of a steamer from Constantinople is about 17 hours, so that this has to be superadded to the voyage from Balaklava to Scutari. But it may fairly be questioned, whether much or any additional injury can be done to an invalid by protracting his voyage a few hours in a calm sea, if the transport be comfortable. The landing at Scutari, and the conveyance of the sick to its hospitals, is a tedious and fatiguing matter. At Renkioi

they will be easily and expeditiously conveyed to the wards. In winter, the transport of supplies may be a matter of some difficulty, and the exposure to the wind, so refreshing during the rest of the war, may turn out a serious evil. But, on the whole, the *locale* of the hospital appears to have been judiciously selected, and bids fair to prove successful. It is now resolved by the Home authorities to increase the accommodation to 3000. The arrangements which will be made for this augmentation are not yet known.—*Private Letter, dated Renkioi, Dardanelles, 20th August, 1855.*

4. *Mineral, Natural, and Gaseous Waters of Condillac.*—Gaseous waters have become a necessity to many, and a delicious draught to almost all, particularly in warm weather. Some are prepared in the family by means of apparatus not always free from danger, particularly that of explosion; others are manufactured and sold to the public under the name of "Seltzer water," although they are only a spurious imitation of the water of that spring. It is a well known fact, that the water of "Seltz" is a natural water, coming from a spring of that name situated in Germany. No medical man can be ignorant of the fact, that fictitious waters, charged with carbonic acid gas by means of high pressure machines, are far from possessing the virtues of water drawn from the spring at "Seltz," or any other gaseous spring. These waters, when the bottles are uncorked, cause a detonation which is a first indication of their imperfection, for it proves that the gas, badly incorporated with the liquid, separates itself precipitately from it whenever the cork ceases to oppose to it a sufficient resistance. The bottles called "syphais" dissemble this capital vice, but do not correct it. It can easily be understood that a disengagement of gas, so prompt, so sudden, has a great tendency to produce an irritating action on the digestive organs. The natural mineral waters, those which have not been adulterated by the addition of a certain quantity of carbonic acid, do not present a similar effervescence. Throwing out gently, little by little, the gas with which they have charged themselves in the bowels of the earth, they exercise upon our organs an excitement equable (regularly kept up), and hence healthy. Instead of an eruption, abrupt and causing a general commotion, they substitute a calm persistent action (remaining firm), which continues from one repeat to another.

The manufactured Seltzer water owes its success to the high price of the natural Seltzer water, which usually sells at one franc the bottle. The low price of the natural gaseous waters of the springs discovered in 1852 at Condillac (Drôme), will throw these preparations entirely out of use, especially as their agreeable properties do not in any measure compensate their disadvantages. This result, so desirable for the sake of the public health, has already been obtained to a great extent in the south part of France, from Lyons to Marseilles and Toulon, and in a great number of the towns in Italy.

The spring "Anastasie," of Condillac, produces a water extremely rich in gas, and of a taste becoming so very agreeable when used to it, that it has been proclaimed by unanimity, "The Queen of Drinking Waters." As an agreeable beverage it stands unrivalled. It is applicable in a great variety of ways in medicine. All the medical gentlemen who have tried its properties, recommend it in convalescence in cases of gasteralgia, in chronic gastritis, in catarrh of the bladder, in gravel, &c., &c.

The water of the spring "Lise," containing a larger proportion of iron, is well adapted for all cases in which iron is generally given. It has the same action and the same properties as the water of the spa in Belgium.

The report, presented by Mr. O. Henri to the Imperial Medical Academy, establishes also the presence of manganese in the waters of Condillac.

It must be remarked, that the specimens of the waters submitted to the Academy were drawn under conditions very unfavourable to the preservation of the gas. The actual quantity of the carbonic acid is much more considerable than the analysis indicates.

The annual report of the mineral waters of France for 1854, published by order of the Minister of Agriculture and Commerce, gives the following analysis of the two springs of Condillac:—

SPRING "ANASTASIE."

In 1000 grammes of liquid :—

Free carbonic acid	...	...	in volume, 0.548 litres.
Bicarbonate of soda, anhydre,	...	...	0.166 grammes.
Bicarbonate of lime, anhydre,	...	...	0.359 "
Bicarbonate of magnesia, anhydre,	...	...	0.035 "
Sulphate anhydre of soda,	...	...	0.175 "
Chlorure of sodium and of calcium,	...	...	0.050 "
Silicate of lime and of alumina,	...	...	0.398 "
Iodine, azotate, salt of potassium,	...	...	perceptible.
Oxide of iron, crenated and carbonated,	...	...	0.010 "
Organic earthy matter,	...	...	not determined.
Fixed mineralizing principles,	...	...	2.193 "

SPRING "LISE."

In 1000 grammes of liquid :—

Free carbonic acid	...	...	in volume, 0.530 litres.
Bicarbonate of soda, anhydre,	...	...	0.155 grammes.
Bicarbonate of lime, anhydre,	...	...	0.954 "
Bicarbonate of magnesia, anhydre,	...	...	little.
Sulphate anhydre of soda,	...	...	0.090 "
Sulphate anhydre of lime,	}	...	0.715 "
Silicate of lime and of alumina,		...	
Chlorure of sodium and of calcium,	...	...	0.170 "
Iodine, azotate, salt of potassium, silicates,	...	...	sensible.
Oxide of iron, crenated and carbonated,	...	...	0.031 "
Organic earthy matter,	...	...	not determined.
Fixed mineralizing principles,	...	...	2.115 "

5. *Mineral Spring at Sanquhar.*—The ancient burgh of Sanquhar is about to obtain a modern celebrity. In its immediate neighbourhood there has lately been discovered a chalybeate spring, possessing medicinal qualities of a valuable description, and especially important in the treatment of stomach complaints. In a few well-attested instances considerable benefit had been derived by invalids from the use of the water; several of the leading gentlemen in the locality, in consequence, recently formed themselves into a committee for the purpose of having this chalybeate spring carefully analysed, and the following results were obtained by Professor Penny, of the Andersonian Institution, Glasgow :—

ANALYSIS.

An imperial gallon of this water contains 14.71 grains of solid matter, consisting of the following ingredients :—

	Grains per Gallon.
Carbonate of iron, ...	2.335
Carbonate of lime, ...	5.650
Carbonate of magnesia, ...	0.650
Sulphate of lime, ...	0.600
Chlorides of potassium and sodium, ...	1.025
Chloride of magnesium, ...	traces.
Phosphates, ...	traces.
Organic matter, ...	3.550
Silica, ...	0.900
	14.710

Specific gravity, ...	1.00044
Degree of hardness, ...	10°

Gases dissolved in the water:—

					Cubic Inches per Gallon.	Per Cent.
Carbonic acid,	...	...	...	...	10.020	60.253
Oxygen,	...	...	...	...	1.795	10.793
Nitrogen,	...	...	...	...	4.815	28.954
					16.630	100.000

The learned professor, in his report, then proceeds to say:—"This water is specially characterized by the notable quantity of iron it contains. All the substances included in the foregoing analysis exist in the water in a state of perfect solution—the water is clear, bright, and nearly colourless, showing that the ferruginous ingredient is perfectly dissolved. It has a styptic and astringent taste, and affords abundant evidence of the presence of iron on the application of appropriate chemical tests. The iron exists in the water in the form of the compound called the carbonate of iron, which consists of carbonic acid in combination with the protoxide of the metal." To this ferruginous substance the water owes all its peculiarities and properties. The professor adds—"The tonic, astringent, and other medicinal qualities of chalybeate waters are too well recognised and appreciated by medical men, to require notice in a chemical report. These waters are by no means uncommon. Among the most noted in Great Britain are those of Cheltenham, Tunbridge, Harrogate, Brighton, Bath, Dunblane, and of the Hartfell Spa, near Moffat. In regard to therapeutic strength, or medicinal power, as estimated from the amount of iron it contains, the Sanquhar chalybeate is about one-half the strength of Harrogate, Tunbridge, and Hartfell Spa waters, which, with the exception of Cheltenham water, are the strongest of those above named. This, therefore, is not a strong chalybeate; but, from the *perfect state of solution* in which the iron exists, and from the purity of the water, it is, in my opinion, well worth the attention of medical men." That distinguished physician and chemist, Professor Christison of Edinburgh, also says—"That the water is calculated to be serviceable in all the diseases for which simple chalybeate springs are at present resorted to with success." We have perhaps dwelt too long upon the chemical properties of the water; and we must now proceed to notice a few of the natural beauties of the wild scenery amidst which this health-bestowing spring gushes forth from its rocky source.

The well is situated within a short mile from Sanquhar, in the wooded ravine or gorge through which the Euchar, a mountain stream rising near the base of the Black Larg, a hill of considerable elevation, situated on the confines of the counties of Ayr, Dumfries, and Kirkcudbright, finds its way to the Nith, after a series of cascades, rapids, and falls of a romantic character. The land in this neighbourhood belongs to his Grace of Buccleuch, or "the Good Duke," as he is familiarly termed by his numerous tenantry, and with his usual princely liberality he has not only given free and unrestricted access to the well and the glen of the Euchar, but has also formed some romantic walks, well supplied with seats, where the natural beauties of the scenery, and the pure and invigorating air for which Sanquhar is justly celebrated, may be enjoyed. The grounds are entered by a neat gateway, with a lodge, and the well itself is the first object of attraction—a copious supply of pellucid water of the most delightful temperature flows in a continuous stream, and is distributed to all comers *free of charge*. The walk, passing the well, winds along the bank of the Euchar, and soon discloses a picturesque waterfall of some ten or twelve feet, semicircular in shape. The view at this point is most pleasing, and a bench has been judiciously placed in front of the fall, where the visitor may sit and enjoy the scenery, and watch the numerous trout disporting themselves in the pool below the fall. Above this point the ravine becomes narrower, with a good deal of overhanging wood, and the Euchar is now converted into a series of rapids and cascades, one of which bears an exact resemblance in miniature to the celebrated Grey Mare's Tail, near Moffat. The banks of the stream are here precipitous, and occasional deep, dark-looking pools of water are seen, where we have no doubt the disciples of Isaac Walton will find

good employment for their rods. One remarkable cavernous hollow enjoys the characteristic name of the "Deil's Dungeon;" and tradition states that a military deserter here concealed himself for some time, and successfully eluded all pursuit. The footpath then leads past the point where the Whaing Burn contributes its waters to the Euchar, and terminates at a beautiful cottage and grounds occupied by one of his Grace's tenants. The country above this gradually becomes wild, and of the usual moorland character. In addition to the scenery on the Euchar, the time of the visitor will be pleasantly occupied by a walk through the beautiful glen of the Mennick, a tributary of the Nith, and a short distance from Sanquhar. The lover of the romantic and picturesque in nature will be amply gratified with this defile in the mountainous range which stretches through the district, and also with the lovely promenade called the "Duchess' Walk" in the adjoining valley of the Crawick. In short, the whole neighbourhood is replete with scenes of picturesque beauty, hitherto little known to the tourist; while historical recollections of covenanting days, and the atrocities perpetrated by Claverhouse and others, are still handed down by father to son. The town of Sanquhar itself contains many interesting relics of antiquity, which, with the leading objects of interest in the neighbourhood, are graphically described in a very interesting little work, entitled a "History of Sanquhar," written by the Rev. Dr. Simpson, one of its clergymen, whose well-known antiquarian research and ability as a labourer in the field of literature, has caused his work already to pass through several editions. Lodgings of a respectable class may be obtained cheaply in the town; while the "Queensbury Arms," under the superintendence of its attentive host, Mr. Ferguson, affords all the comforts of a respectable "hostelrie." Here good horses and carriages are obtained; and we know no drive in Scotland more beautiful in any season of the year than the road from Sanquhar to Thornhill or Dumfries, winding as it does through the beautiful valley of the Nith, with the princely demesne of Drumlanrig at its southern termination. With all these attractions, we look forward to a large influx of visitors to Sanquhar, and that it will rival Moffat, its sister town, in the same county. The Glasgow and South-Western Railway station is conveniently adjacent to the town.

6. *Mineral Well at Partick.*—Having had occasion to analyse the water in several of the wells in this locality, my attention was consequently drawn to a spring on the north side of the Kelvin, a little above the bridge on the Dumbarton road, upon the Gilmourhill grounds, which appears to me likely to possess qualities similar to some of the celebrated mineral springs. At all events it may not be altogether intrusive to call the attention of the community to the existence of such a spring, and should the medical profession think it worth a trial for some poor invalids who cannot visit distant spas, it may prove of great service. The walk to it is pleasant, and, notwithstanding that the Kelvin occasionally flows with *something like milk*, the spring is always clear, cool, and invigorating. Without going over the details of the analysis, the following are the contents of one gallon water drawn last month, given in the state in which the matters evidently exist in solution:—

	Grains.
Silica, - - - - -	1·00
Chloride of sodium (common salt), - - - - -	1·40
Sulphate of soda, - - - - -	7·37
Sulphate of magnesia, - - - - -	7·35
Sulphate of lime, - - - - -	4·50
Carbonate of magnesia, - - - - -	2·50
Bicarbonate of iron, - - - - -	4·54
Bicarbonate of lime, - - - - -	6·62

35·28

The quantity of carbonate of iron with the salts of soda and magnesia in this water gives it a peculiar though not disagreeable taste, and also something of

the character of a medicinal spring. The old inhabitants of the town of Partick will easily recognise, in the taste and effects of this water, the old "Cooper's Well."—*Letter from Mr. James Napier, Hamilton Crescent, Partick.*

7. *Glasgow Medico-Chirurgical Society.*—10th July, 1855.—Mr. Lyon in the chair. Mr. Downie, surgeon, Renfrew, was elected an ordinary member.

Mr. Dickson, surgeon, Baillieston, exhibited the cranium of a miner, who, in ascending a coal-pit, came into violent collision with a projecting iron bar, and thereby sustained a compound fracture of the frontal bone, with displacement of the nasal, malar, and superior maxillary bones. Both the frontal sinuses were opened, and there was a deficiency of the frontal bone, measuring $2\frac{3}{4}$ inches in its transverse, and from $\frac{3}{4}$ to $1\frac{1}{2}$ inch in its vertical diameter. The exhibitor stated that the right optic nerve and superior aspect of right eyeball had been exposed, the dura mater lacerated, and the substance of the brain to some extent destroyed. Notwithstanding these severe injuries, the man recovered, and lived for a period of ten years, the intellectual faculties continuing to all appearance unimpaired. With regard to the state of the external senses, Mr. Dickson mentioned that the smell was totally and permanently lost; the hearing, permanently diminished; and vision, at first uninjured, but after two or three days, lost so far as the left eye was concerned; it continued thus absent for two or three weeks, and then again gradually improved till it was perfectly restored. Mr. Lyon, who had been requested to see the patient, corroborated, generally, the narrative of the case; of which, however, he had not preserved accurate notes. (Mr. Dickson's case is published at p. 318 of this Number.)

Dr. Anderson then read a case of tumour of the right side of neck, involving the larger blood-vessels and nerves of that region, which he had removed by operation. The particulars of this case will be found at p. 270 of the present Number of the Journal. In the discussion which followed, the members, generally, expressed their sense of the importance of the paper, and the courage and dexterity of the operation. Dr. T. Watson stated his opinion, that the symptoms indicated the malignant nature of the tumour, and doubted the propriety of surgical interference in such circumstances. Dr. R. Corbett commented on the difficulty of diagnosis of the parts involved by such tumours, and the high expediency of early operation, before parts of such importance as the internal jugular vein, the pneumo-gastric and sympathetic nerves became involved. Dr. Morton, referring to the dreadful dyspnoea produced by the mechanical pressure on these important nerves, suggested the propriety of subcutaneous section of the confining fascia, and the inferior attachments of the sterno-cleido-mastoid and platysma. Mr. Reid commended highly the minute and accurate description which Dr. Anderson had given of the anatomical relations of the parts involved, and adverted to the extreme value of such details, as establishing the connection between the symptoms observed during life, and the tissues which were after death found to be involved. Mr. Lyon commented, generally, on the great difficulties of management and diagnosis of cervical tumours, and stated some of his own experience on the subject. He wound up by conveying to Dr. Anderson the thanks of the Society, and the expression of their desire for the publication of his case.

August 14th.—Mr. Lyon in the chair.—The Society met at 7 o'clock. The attendance was small. Dr. Anderson made a few remarks upon the departure from the former hour of meeting. He did not observe that the earlier hour secured a better attendance of non-resident members. If such were to be the result of the change, he would at once concur in the new arrangement, though he could quite understand how, on the other hand, 7 o'clock was not a convenient hour for town members to leave their homes. Other members expressed themselves to the same effect; and in the end, one of the secretaries reminded the Society that the present hour of meeting was perhaps, in the very nature of the case, more to be regarded as an experiment than as a final arrangement. If, therefore, it was found to be an inconvenience to the majority, while the smaller number, the country members, failed to avail themselves of what is doubt-

less for them a more suitable hour, they would have simply to recur to the former hour, 8 o'clock.

Dr. Weir then read a paper on Dislocation of the Thumb, which will be found at p. 309 of this Number.

Dr. Anderson had no hesitation with regard to the mode of procedure to be adopted with a view to the reduction of this dislocation. He viewed the object as one entirely within the reach of, and solely to be obtained by, mechanical appliances, nauseants and other medicines being entirely uncalled for and useless. How ridiculous, said he, must a number of eminent surgeons and scientific men, bungling over such a case with misdirected force, appear in the eyes of a shrewd practical mechanic! Dr. Anderson regarded the lateral ligaments as the real source of difficulty in the way of reduction; and in this light he had no doubt that their being ruptured, or not at all injured, was the explanation in some cases, and of the difficulty in others, of effecting the replacement of the ends of the bones. Mr. Hey was the first, he believed, to direct attention to the proper explanation of the source of difficulty. And though Sir Charles Bell's references to the point were not so clear as they might have been, he, in all likelihood, had the same thing in view. Dr. Anderson would direct the thumb to be bent before extending the phalangeal bone. If the ligament is torn, the reduction will be easy; if it be entire, he may be quite unable to overcome the difficulty by any amount of manipulation, while much harm may be done by the application of great force. He was hence of opinion, that subcutaneous section of the ligaments may be usefully resorted to, to lessen the difficulty in the latter class of cases.

Dr. Corbett coincided with Dr. Anderson in thinking that Dr. Weir had already exhausted the subject. He might, however, mention that he had met with one case, and only one, in the course of his practice. It was of the less difficult kind to have to do with—the proximal end of the first phalanx was imbedded in the fleshy ball under the metacarpus. He bent the thumb across the palm; and while extension was made in this direction by an assistant, he manipulated the ends of the bones in the direction of the articulation, and, after considerable difficulty, succeeded in replacing them. He at that time studied the subject a little; and he now recalled to his mind what had then occurred to him as a difficulty which he would have had to contend with, in addition to the four pointed out by the Essayist, had his case been of the nature of Dr. Weir's—that is, had the proximal end of the phalanx rested above the metacarpal bone. This was the tubercle on the palmar surface of the phalanx, which, in that position, or when being extended, locks into a corresponding depression on the upper surface of the metacarpal bone.

Dr. Hatrick had met with a case of dislocation of the phalanx of the thumb under the metacarpus. In the first attempt at reduction, shortly after the dislocation had taken place, he used every means of replacement, but without benefit. The result was great swelling and pain. After a week, when the swelling was gone, he was equally unsuccessful. He was not informed of the ultimate issue of the case; but he believed the patient had recourse to the Infirmary.

Dr. Robertson merely rose to thank Dr. Weir for his very excellent paper; and the Society was under obligation, too, he felt, for Dr. Anderson's suggestion in regard to subcutaneous section. This operation, he believed, when carefully performed about other joints, was seldom followed by untoward effects; and that it was capable of useful extension to the object pointed out by Dr. Anderson, he himself felt convinced. In conclusion, he alluded to the *degree of usefulness* to which Nature can adapt the thumb, even in cases where all plans have failed, and where even much evil has resulted from the violent manipulations made use of.

Dr. Baird, of Paisley, had no original remarks to make upon the subject of the paper; he felt much gratified, however, in hearing the clear and full account of the subject by Dr. Weir.

Mr. Reid had met with a case of forward dislocation in a child, produced by a fall from a rotatory swing, such as are in use about some schools. He found it

very easy to replace. As a curious fact in connection with the possible dragging off of the phalanx in the course of the attempts to reduce, which had been referred to, he might, perhaps, be permitted to refer to a case which he had seen in the village where he used to practise formerly. It was that of a carter, who, sitting upon the foremost of two carts, had a hitch of the rein round one of his thumbs. By a sudden jerk from the horse starting, the small noose tightened and snapped off the last phalanx as smoothly and neatly as if done by a knife. The carter came directly to him, and, asking if he could not put it on again for him, produced the end of his thumb from his waistcoat pocket. To please the man, Mr. Reid put it neatly in its place, and with adhesive plaster and bandage secured it there. Adhesion took place at the two lateral aspects of the member; but, after some days, the replaced piece sphacelated; and, having to be removed, it was found necessary to use the knife at both sides. The cut bled freely, showing that the parts were united by blood-vessels.

Dr. Morton had listened with much pleasure to the concluding remarks of Dr. Weir. He was sorry he was not present in time to hear the whole paper; but he agreed in all he had heard from the Essayist. He was prepared to hear a full and fair account of the subject; but he had hoped Dr. Weir would do more—that he would not only tell us of its difficulties, but unravel the whole subject, so that we might henceforth know the real difficulties we had to contend with, and know how to do so. Many, he said, find it easy to effect the replacement, and don't believe there is ever any difficulty at all. Others, again, have been so baffled with their cases, that they are equally firm in their conviction that it can never be possible to reduce a genuine case of luxation of this joint. Dr. Morton thought, if the ligaments were the source of the difficulty here, that we ought frequently to find them acting in the same way in other joints, which we do not. This he illustrated by a reference to the knee-joint and the jaw.

Mr. Lyon thought, with Dr. Morton, that a satisfactory reason had not yet been given for the difficulties which undoubtedly exist in cases of dislocated thumb. In other joints, the ligaments are stronger, and yet they do not there interfere with our proceedings. And in the thumb—even suppose these are the real source of difficulty—surely, still, the force applied in very many of the cases is more than sufficient to tear them, and thus, the obstruction being got rid of, the reduction should in the end be easy. Now this is not the case. And the same remark applies to the muscles; they can never be efficient obstructions to the replacement. As to the cases in which the tendons are said to be wedged between the ends of the bones, he disbelieved entirely that this is ever a source of difficulty. He thought, nevertheless, that Dr. Morton had made use of a bad illustration in referring to the knee, a joint which, Dr. Morton must know, is never so completely dislocated as is the case with the thumb. In regard to the recent case in the Infirmary, he had seen it under Dr. Hunter's care. He had no part in the management of the case; but he saw very violent attempts made once to reduce it, according to all the approved modes, and he believed they were several times repeated, but without benefit; and he understood that the patient had left the Infirmary unrelieved. Now this he thought should never be allowed; and, for his part, he would resort to every available method rather than have such a case leave an institution like the Infirmary unimproved, and he certainly would not hesitate to resort to subcutaneous section. A plan, however, not referred to by Dr. Weir, was by bending violently backwards, and, at the same time, rotating the thumb. This plan he first saw tried by Dr. A. Buchanan, and it was successful. Another plan he had heard of—indeed, it was the same in principle as the last—was the application of the ring of a key as a lever to bend backwards, and, at the same time, twist the phalangeal bones into their place.

Dr. Anderson having referred to a case which he had seen a week ago, in which a gentleman, with the assistance of his servant, reduced a dislocation of one of his thumbs; and Dr. Robertson having noticed a similar case to illustrate the ease with which sometimes the luxation is replaced,

Dr. Weir replied. He felt obliged to the speakers for the lenient spirit of their remarks. There was scarcely any point calling for notice on his part. Dr.

Morton, however, he said, had surely not remembered the anatomical configuration of the bones, though he might have had the ligaments in his mind when he made the references, which he had, he thought, misapplied.

11th July, 1855.—Dr. Wilson in the chair.

Dr. George Buchanan, who has recently left this country for the seat of war in the East, was elected a Corresponding Member.

Dr. Lawrie read two cases of Pharyngeal Abscess, occurring respectively in the practice of Dr. Lochead and of Mr. Renfrew (see p. 322 of this Number), and accompanied his narrative with illustrative remarks.

Mr. Lyon gave a *viva voce* account of an interesting case, in which his patient had sunk in the sixth week of utero-gestation—apparently from exhaustion, produced by excessive irritability of the stomach, and generally of the nervous system. The nervous centres were not examined; but a careful inspection of the abdominal and thoracic viscera threw no light upon the cause of death. Similar symptoms had exhibited themselves in the earlier portion of two or three previous pregnancies, in the intervals of which the lady had been perfectly healthy.

8. *British Association*.—The twenty-fifth meeting of the Association was held in Glasgow; commencing on 12th September, and terminating on the 19th. It is universally allowed to have been a most auspicious and successful meeting. The number of learned and scientific gentlemen assembled from various parts of the world was very great, perhaps greater than ever met together on any former similar occasion. Besides a sprinkling of medical men from all the principal cities in the United Kingdom, there were a few foreign *savans* connected with our profession, among whom we may name Albert Kölliker, professor of chemistry at Wurzburg; Dr. Retzius, professor of anatomy, Stockholm; Dr. Liebig, Dr. Cohn, Breslau, &c. Prince Lucien Bonaparte, nephew to the Emperor of the French, attended the sections, and took part in some of the discussions. The various contributions which were read at the different departments were admitted to have been interesting and instructive, and we have no doubt elicited much valuable information. The geological section, presided over by Sir R. J. Murchison, seems to have been as usual the most attractive, and the number of papers read was greater than at any of the other sections. Some very learned papers on difficult and abstruse subjects connected with physiology were read by Professors Kölliker, Retzius, and Allen Thomson, also by Dr. Ransom, Dr. Carpenter, and others.

Perhaps the only paper of practical interest connected with medicine was one read in the statistical section from the pen of Professor Allison, "On the application of statistics to several questions in medical science, particularly as to the external causes of disease." Dr. Allison, in this contribution, discussed the question as to the contagious nature of cholera, maintaining that the disease occurred during the decomposition of the animal matter, in which the virus of the disease appeared to exist, but not after the decomposition had gone a certain length, for no poison was found in a body dead of cholera after a certain length of time. He stated that it had been perfectly ascertained by experiment, that cholera could be communicated to animals by inoculation from the watery stools of cholera patients. Little discussion followed the reading of Dr. Allison's paper, as there happened to be few medical men present, but Dr. Camps from London gave it as his opinion that cholera was not contagious, at least to the extent maintained by Dr. Allison. He mentioned that the Epidemiological Association of London had instituted minute inquiries with the view of settling this most important point. Dr. Malcolm said that he had much experience of cholera in Belfast, where the decided opinion, during the last visitation of the epidemic, was that it was contagious. He was himself an anti-contagionist, however; for, among other reasons, he found that, when fever was epidemic, medical men suffered in large proportion, while, when the cholera was epidemic, the proportion was usually much smaller.

In this section, also, another interesting paper was read by Dr. Malcolm of Belfast, "On the Influence of Factory Life on the Health of the Workpeople."

Dr. Malcolm first directed attention to the influence of flax and tow dust, which materially injured the organs of respiration. The minute particles of this dust consisted of pointed angular fibres, armed, as seen through the microscope, with minute particles of silica, which, as was well known, was the chief ingredient of glass, and must, sooner or later, by inhalation, produce organic disease of the lungs. The position of the workers, who were confined to a stooping posture, was, of course, unfavourable, and so was the high temperature. In the spinning room the air was not only warm, but charged with vapour, so the workers were constantly perspiring, and the skin, of course, excited to undue activity. In addition to this, there was the sudden transition from a warm and moist atmosphere to a cold and dry atmosphere, when the workers left the mill. As the result of his inquiries, he had discovered that skin diseases, pulmonary consumption, and chest diseases generally, prevailed more than the average among factory workers. As one means of reducing the tendency to disease, Dr. Malcolm recommended increased provision for insuring ventilation. He was aware that there was a great improvement in this respect of late, but much remained yet to be done. Provision for change of garment was also important; and he would recommend that there be a mill dress, to be exchanged for the ordinary dress when the wearer left the factory. It would be of great consequence, also, that baths should be provided in connection with the factory, so that the workers might cleanse their skin before leaving. He believed that if factory employers were to provide such improvements, and were generally to take an interest in the social, intellectual, and moral condition of their workers, their improved health, and the mutual confidence which would be established between them, would more than reward all the expenditure which might be made.

Mr. Billing believed that much of the disease which existed among the factory workers was owing to the use of malt liquors, and the inordinate quantities of bad tea and coffee taken by the female workers especially.

Mr. M'Callum, of the House of Refuge, considered that a great amount of the intemperance among our factory operatives and that class was owing to the unhealthy situation of their houses, driving them to places where they expected enjoyments they could not get at home.

We congratulate the members of the Association on the success which has attended the meeting at Glasgow, and we are sure that the foreign *savans*, and the other eminent and distinguished strangers who were present, must have been highly gratified with the reception they met with in this city. At the concluding meeting on Wednesday the 19th, it was announced that the Association would meet in 1856 at Cheltenham.

9. *Seventeenth Annual Report of the County and City of Perth Infirmary for 1854.*—The in-door patients treated from January, 1854, to January, 1855, amounted to 393 males, and 282 females; total, 675. Of these there were dismissed—Cured, 254 males and 190 females; relieved, 55 males and 27 females, and for other sufficient reasons, 25 males and 25 females, while 35 males and 24 females died, leaving under treatment on 1st January, 1855, 24 males and 16 females. Besides these, the patients who attended at the House and received medicines, amounted to 270 males and 269 females; in all, 539.

There has been a considerable increase in the number of the patients during the past over the previous year. This increase has been owing, in a great measure, to the prevalence of diarrhoea, cholera, and febricula, which, by themselves, create an increase of 124—the increase being respectively 38, 56, and 30. There has, however, been a diminution in the number of fever cases, of 18 below last year. The remaining portion of the increase is not accounted for by any remarkable difference in other diseases.

This year, notwithstanding the visitation of epidemic cholera, the rate of mortality has not been so high as that for the former year. In 1853, the rate of mortality among in-door patients was nearly 12 per cent., while for the past year it is only 10.09 per cent., or deducting cases moribund on admission, 5.6 per cent. There is an increased rate of mortality among the patients visited at

their houses; the per centage in 1853 being 8·2, while in 1854 it is 11·301; or, deducting moribund cases, 10·8 per cent. The total number of deaths in the bygone year is 102, and the average mortality for all the patients whose diseases were treated to a termination is 7·623 per cent.

The number of medical cases treated has been 991, and the surgical, 506. The diseases which have proved most fatal have been cholera and fever—from which there died, respectively, 24 and 10; and certain chest diseases—viz., bronchitis, phthisis, and pneumonia, of which there died, respectively, 6, 10, and 7.

It appears that 46 of the fatal cases were of that kind which are generally considered as incurable—viz., disease of heart, 5; disease of brain, 3; cholera, 24; phthisis, 11; and disease of kidney, 3. Several of the cases ordinarily curable were brought in at such an advanced stage that they scarcely survived admission. Of the total 59 deaths in the Infirmary, 18 died within 24 hours after admission; and of the 44 deaths reported by the district surgeon, 4 were moribund when first seen. Twenty-five operations have been performed during the year, of various degrees of severity; of which 24 have been cured, and 1 remains—in a fair way, however, of being brought to a favourable termination.

The greatest number of patients were admitted in the month of September, there having been 159; August ranks next, there having been 144 admitted in that month; the smallest number of admissions was in the month of October, when there were only 90. The increase during August and September must be attributed to the invasion of cholera. The greatest number of deaths occurred in the months of August and September, there having been 16 in the former, and 21 in the latter: the smallest number was in November, when there were 2. The preponderance of deaths in August and September, must also be referred to the prevalence of epidemic cholera during their continuance. The greatest number of deaths occurred among children who had not reached the age of 10, among whom 19 died; but the greatest rate of mortality was among those between 70 and 80 years of age, among whom it was 18·6 per cent.

The epidemic of cholera, during the past year, has followed its usual and death-scattering course: there were 57 cases admitted to the House, and visited by the district surgeon. The number of deaths has been 24 (or 40 per cent. of the males, and 50 per cent. of the females admitted), which appears to be about the average mortality in this pestilence. The scourge appears to have broken out towards the end of July; gradually increased in violence during the month of August, and reached its maximum about the middle of September, when it rapidly declined, and after the end of that month, there were no cases of cholera applied for admission to the Infirmary.

It may, lastly, be remarked, that at the time of the admission of patients labouring under cholera, a panic seemed to seize the other patients in the House, and many of them left at their own desire; but it is curious and instructive to notice that, of all who lived within the walls of the Infirmary during the prevalence of the epidemic, none had unequivocal symptoms of the disease, except those who were affected before coming in.—*Report drawn up by John Sibbald, M.D., House Surgeon.*

10. *Fifteenth Annual Report of the Crichton Royal Institution for Lunatics, Dumfries.*—Of 194 applications for admission, accommodation could not be found for more than 100, although every effort was made to respond to the wishes and confidence of the community, and to relieve the most clamant cases of hardship and embarrassment, by appropriating even the public rooms for the reception of patients, and by the sacrifice of much of the personal comfort of the officers.

Fifty-three patients have been discharged as recovered, fourteen as improved, and twenty-five have died. The proportion of those restored to sanity, or to such a degree of intelligence and self-control as to resume their place and duties in society, is very satisfactory. The standard, however, by which this restoration is measured is arbitrary and inexact. Upon one occasion, it is the opinion of the medical officer; upon another, the views or interests of relatives; and upon a

third, the mere capacity for mental or physical exertion, which decides the discharge of a patient; and the only ultimate test is, that the individual does not abuse the confidence reposed in him, and is received, and treated, and trusted as he formerly was. That some of these retain and carry with them into active life delusions and exaggerated modes of feeling is indubitable. Hallucinations, however, exist in what are regarded as healthy, happy, and useful minds; and it is necessary to accept, as the condition of liberation, that power of will which controls, or conceals, or applies to legitimate objects whatever is morbid, secures conformity with the customs and arrangements by which society is regulated, and imparts that aspect of health which is recognised as health.

The mortality has been considerable during the past year, although still below the amount calculated, expected, and generally occurring in such establishments. Death took place in one individual who was dying when admitted; in four sent here to receive the sick-bed and death-bed care and kindness which their own homes could not supply; in five who, previous to admission, suffered from the diseases under which they succumbed. One individual died suddenly upon the eve of his discharge; but the majority belonged to the incurable classes, and many of them had lived long in seclusion, were identified with the traditional history of the establishment, are mourned for as friends and companions rather than as captives, and who sank from old age, or that premature decay which follows many forms of derangement, and brings with it many of the infirmities and maladies that attend longevity. Among the deaths were two from cholera. They occurred when the disease prevailed throughout the country and in the adjoining district, and had penetrated many similar institutions. The victims were both inmates of the Boarders' House, of feeble frame, and had contracted many of the habits, and were liable to affections supposed to predispose to the disease. But they had not left their galleries for years; they were surrounded by many of those comforts and circumstances which afford protection from the epidemic, and they were not exposed to any known sources of contagion. The attack was in each individual modified by the condition of the nervous system, afforded few of the most characteristic symptoms, and terminated rapidly and fatally. Although there was much sickness, and especially affections of the bowels, in the House at the time, no other cases of cholera occurred.

Our occupations are vigorously prosecuted as pastimes, and pleasures provide occupation. A band of the inmates of the Crichton Institution are engaged in trenching, and so clamorous did volunteers become for enrolment, that it was necessary to restrict their numbers. The theatre, concert, and ball-room; the schools of drawing, music, languages, millinery, still have their numerous patrons and pupils. Although dancing is less esteemed than the sedentary amusements, which give repose to the body while the mind is gently and cheerfully engaged, it was recently endued with new attractions, and uses, and meaning. Balls in costume and character were accomplished under the auspices of the officers: history was made to speak through its cherished and celebrated names, its picturesque costumes: pomp and pageant and music swept along before the spectators, reviving recollections of scenes and events with which every mind is stored, and exciting those healthful associations which beauty and elegance rarely fail to produce. Upon one occasion twenty-three patients joined in these recreations as Queens, Lords of Leicester, Amy Robsarts, Pachas, Indians, Celts. Literature has still its numerous votaries; and while the *New Moon* preserves the most interesting fugitive productions of the inmates, a volume of poems has recently issued from our own press, composed by one who is in every sense insane, who has been in seclusion for ten years, composes only during the night and when disturbed and wretched, and who may display the most exquisite delicacy of sentiment in the same moment that she strikes those whom she loves, or wreaks her intemperate jealousy on the window glass.

A course of lectures upon mental diseases and their management has been commenced, and will be continued during the winter. It is addressed to the officers, and to all members of our community engaged in the treatment of the insane. A certain amount of education and experience is expected in every

artisan, is demanded from those intrusted with the care of even domestic animals; but for those to whom the happiness and tranquillity of the human mind is consigned, no training is provided, no instruction accessible. A guardian is appointed who may have no higher qualification than physical strength and courage, who never saw a case of insanity, who may attribute the errors he is expected to correct, the propensities he is compelled to control, to the manifestation of perversity, malice, or to demoniacal possession, and who may remain for a quarter of a century in daily contact with these ebullitions, in utter ignorance of their real character, and with no guide as to the mode in which his duties are to be performed, except a series of brief regulations associated in his mind with fear of punishment. Yet, for this class there is no normal school, no golden road, no road at all to knowledge. These instructions will embrace a very full discussion of the subjects embraced; but they will be so modified as to rise to the level of the educated minds addressed, and yet to fall within the grasp of the shrewd and sensible, though illiterate, individuals who compose the class of attendants. It is probable that the whole scope of the subject will not be embraced—it is obvious that the scientific details must be directed to one portion of the auditors alone; but it is believed that no one will retire from the investigation without some clearer conceptions of the great work in which they are engaged, and higher views of their own responsibilities.

Famines and periods of scarcity have been characterized by epidemic madness, by ebullitions of popular frenzy, and those tendencies to crime, and panic, and extravagance, which prove the general influence of privation or diminution of nourishment upon the intellect and will. It may be no fiction that a well-fed, will prove a rational as well as a prosperous community; it is demonstrable that indigence, impoverishment, and starvation are direct causes of every form of mental disease, as well as of every form of moral delinquency. It is not that poverty and privation leave the system defenceless; they introduce an element of destruction by poisoning or impoverishing the blood, and complete that overthrow which external squalor and misery had begun.

Abstinence is likewise a symptom of insanity, whatever may be the exciting cause. Where abstinence is imposed, where it is not voluntary, the results are formidable and fatal; but instances occur where life has been protracted for a long period. It has been generally supposed that death must ensue after seven or ten days' starvation; but it appears that one man was supported on orange water for sixty days; that the damp from the walls of a cavern sufficed several workmen, buried under Dover cliff, for fourteen days; and Sir John Forbes recounts a case of a young person whose life was sustained by tea and toast-water for twenty-one days. Where abstinence is resorted to as a duty or a penance, where there is the support of principle, or enthusiasm, or mere delusion, the constitution long resists the experiment to which it is subjected, and appears in many instances to become reconciled to the smallest and insufficient quantities of nourishment. This tolerance of starvation has been most conspicuous among religious ascetics. The act has been associated with ideas of self-denial, mortification, and purification from the grosser parts and passions. Examples are on record of pious persons, whose motives are unquestioned and unquestionable, such as St. Simeon Stylites, who took no food for forty days in each succeeding year for forty years; and in more modern times, Dome Claude Leante fasted during the whole of Lent for eleven years. He could not sleep during this protracted penance; he was so nervous that he could not bear the external air, and became anæmic and wasted. One patient rejects food because she is not worthy of it; another, because abstinence is the speediest, purest means of sublimation and of reaching God; a third, imitating the primitive Christians, repudiates it because it contains blood; and a fourth, who declares that there are twelve persons in the Trinity, and that a portion of her body is sacred to each, cannot pray if she eats. The effects of moderate but protracted abstinence may be detected in other morbid conditions. Dysentery is a frequent accompaniment of famine. A patient, who abstained from animal food for eleven years, but took vegetables abundantly, suffered much from scurvy and profuse bleeding from the gums. Another, who took the ordi-

nary diet, but in small quantities, was subject to the same disease, to purpura, petechia, and discoloration of the skin from the slightest touch.

The admission of a patient so affected creates nearly the same alarm and anxiety in an asylum as that of a suicide. If the mind of the patient be open to reason, persuasion, religious warning, these should be employed; if the repugnance depend upon loss of appetite, previous habit, or even capricious preference, the kinds of food should be varied, be luxurious or piquant, or served up in any attractive mode; the place in which it is taken may be changed; the servants who administer, the associates who participate, may be changed. Medical means have been sanctioned as sufficient to remove this obstinacy. A purgative, an emetic, or the application of a few leeches to the epigastrium, may be a most judicious course where the refusal depends upon stomachic disorder, or upon mental impressions of which that disorder is the root; but it will be impotent where a perverse will, a superstitious fear, or a suicidal tendency has to be conquered, and positively injurious when the patient is exsanguine, exhausted, and sinking. But fear has been triumphant as well as love. Individuals have shrunk from actual cautery; the mere spectacle of the instruments employed in administering food has sufficed. Actual pain has been resorted to when intimidation failed. In Germany, the rotatory chair, and, under the auspices of M. Leuret, the douch, terrified into submission. Extreme cases may justify these extreme experiments, but they are generally inapplicable; the moral impression, by which obduracy is subdued, may prove as pregnant with evil as the perversity against which it is directed; and they are not so easy, so safe, or so successful as compulsory alimentation, which may inspire fear, but which even a lunatic can perceive is not employed to terrify.

During the last fifteen years not a case has been lost from inanition, although hundreds of abstainers have been under treatment. This statement is made in no boastful spirit, nor is the fortunate result attributed to any particular discrimination in the operator, nor ingenuity in the arrangements. It may be attained by all, and with the same simple mechanism. Such success has followed, and always will follow, prompt recourse to artificial support.

11. *Forty-third Annual Report of the Old Man's Friend Society for 1854.*—At the beginning of the year there were 101 residents in the asylum, and 23 out-door pensioners receiving a regular allowance. These numbers were augmented during the year by the admission of 63 new applicants into the asylum, and an addition of 7 to the out-door pensioners. In the course of the year, 28 of the inmates died, and 30 left or were dismissed; reducing the number of residents at the close of the year to 106; and by the decrease of 11 of the out-door pensioners, their number was reduced to 19. Making these additions and deductions, there remain at the close of the year 125 in all on the list, a slight increase over the previous year in the number of residents in the asylum, and 7 fewer out-door pensioners. It will be noticed that, while 11 of the small number of 30 out-door pensioners died last year, the deaths among the 164 temporary, or 109 permanent residents, are only 28, a proof of the value and necessity of the care and shelter the asylum affords, and certainly, in the case of both classes, an urgent plea for prompt aid being rendered, seeing that, if delayed but a little, it may be too late. Of the 28 who died in the asylum, 4 had been only a few days there, and other 6 had been admitted within the year. It is not improbable, that had these 10 sooner enjoyed its advantages their days might have been prolonged, although of the whole 28 not less than 20 had passed the limit of threescore years and ten, and 4 of them had attained to fourscore years. The rest had spent 7 years, and one fully 10 years, under the friendly and fostering care of the asylum. A large proportion (fully one-third) of the 30 who left or were dismissed, were persons who were not satisfied with the restraints imposed on them by the regulations of the house, and whose continuance, therefore, would have had an injurious influence on their neighbours. One or two went to resume work, or to reside with relatives, and one or two became inmates of other institutions. The number in the boarders' parlour is 10, of whom 5 had been clerks, and in respect

of education, association, and manners had seen brighter days, and at least one of them had been a subscriber to the Society to whom he is now indebted for a home. As in larger circles, the inmates embrace considerable varieties as to character, attainments, education, and manners, including the rustic labourer, the more intelligent mechanic, the brave defenders of their country by land and sea, the once enterprising and aspiring shopkeeper, the man of subordinate mercantile details in the counting-house, and even the head and mainspring of such pursuits, whose easy and courteous manners still indicate the higher station he once filled. Fortune and friends have alike failed them; but, though age has exhausted the energy and extinguished the hope of altering their lot by any personal exertions, they are happily not left to languish unpitied, or in danger of perishing through privations to which at one period they little expected to be exposed. In the asylum they are associated with companions in misfortune, and find a home where, if their wants are frugally, yet are they fitly and regularly supplied.

The Medical Attendants stated:—It is with peculiar satisfaction that we are again enabled to report favourably of the health of the inmates of the Asylum for Indigent Old Men. Though cholera prevailed throughout the city during the greater part of the year, we are happy to say, no case occurred in the institution. It is deserving of notice that, with the exception of influenza in 1846, the inmates have enjoyed immunity from all those epidemics with which the city has been visited. This remarkable exemption is a most invaluable testimony to the general efficiency of the institution, and to the conduct of those intrusted with its management. The only precautionary measures we considered necessary, were those which had been adopted during the two former epidemics of cholera, viz., a slight addition to the usual diet, and the restriction of the old men from visiting their friends and acquaintances throughout the city. Such complete isolation was at first somewhat reluctantly submitted to, but a little explanation was all that was necessary to convince them of the propriety of the measure, and to secure a cheerful compliance. The advantages of this step were fully exemplified soon after the epidemic appeared by the following occurrence:—One of the boarders, to whom, of course, more indulgence is granted than to the ordinary inmates, was taken ill when out, and died of cholera within twenty-four hours, in the house of a friend in High Street. To these, together with the sanatory adaptations of the house, the attention to personal cleanliness, the regular habits, and the general good conduct of the old men themselves, we are to ascribe, humanly speaking, this happy exemption from cholera and other epidemic diseases.

There has been a slight increase in the mortality during the year, the number of deaths being 28, which is an increase of 4 over the preceding year. It is necessary to state, however, that slight variations in the mortality list cannot strictly be regarded as indicating the comparative state of health or disease in the institution during the respective years. It frequently happens, that applications for admission are not made till the applicants have reached apparently the last stage of physical infirmity. Though it is the custom not to admit any who are labouring under incurable disease, yet it is frequently found, after admission, that chronic diseases are interwoven with the infirmities of age; but by the increased comfort, care, and attention bestowed, many of these infirm old men rally and regain comparative health, which they continue to enjoy for years afterwards. Others, again, do not recover, but linger on and sink often within a few weeks or months after their admission. It will thus be observed that the latter class cannot strictly be regarded as having been inmates of the asylum at all, as they required to be sent to the sick room as soon as they were admitted, which they never left till their names were added to the list of mortality. To this cause, chiefly, is to be attributed the present increase, more than the usual number having died a very short period after admission. We may state, as the result of our experience, that the majority of the aged are unwilling to admit that they have any ailment but what is necessarily associated with advancing life and the infirmities of age; and hence, were it not for the care and vigilance exercised over them within the institution, diseases would often be

allowed to go on unchecked till recovery became hopeless and remedies unavailing. But the strict surveillance maintained, almost in all cases, prevents disease from progressing, and an opportunity is afforded for the application of such remedial measures as will remove the disease, or at least alleviate the symptoms of the unhappy sufferer.

12. *Forty-ninth Annual Report of the Glasgow Lock Hospital for 1854.*—As the Glasgow Lock Hospital has now been in existence for half a century, it may not be improper, on this occasion, shortly to glance at its past history, and endeavour to ascertain how far the objects of its founders have been realised. This institution was originated in the year 1805, by the efforts of a few gentlemen, whose chief motives were a disinterested regard for the welfare of society, and commiseration for the sufferings of that unfortunate class of females who are to be found in this and all large cities. Previous to that period, these wretched creatures had no opportunity of being properly attended to while suffering under venereal diseases.—The consequence was, that the disease became highly virulent, and occasioned evils which threatened to deteriorate a large mass of the community. At first, the benevolent efforts of these gentlemen were appreciated to only a very limited extent. It was considered by many in those days, that such an institution could have no other tendency than to increase the evils which it was intended to mitigate. The experience of the half century which has since then elapsed, unequivocally demonstrates that such apprehensions are altogether imaginary. It is generally believed that the reason why venereal diseases now appear to be of a milder type, and less deplorable in their effects than they once were, is in a great measure attributable to the establishment of such institutions as this. Syphilis, if improperly treated, or allowed to go on unchecked, still proves itself as virulent and fatal as it ever did. But the improved methods of treatment adopted in such hospitals, and the facilities which now exist for receiving proper advice, have greatly mitigated the disease, and prevented much suffering even among the innocent. Though the chief aim of the founders of the Lock Hospital was the cure of a most virulent disease and the relief of physical suffering, we conceive that even in a moral point of view the hospital has high claims to general support. Fortunately, among its directors and officials, there have been many men most conspicuous for humanity and benevolence, who, taking advantage of every opportunity of doing good, endeavoured to restore these unfortunates to a life of rectitude and usefulness. While their efforts have not always been attended with the success which could have been desired, they have succeeded to an extent which shows, that if it were possible to place these miserable creatures, on leaving the institution, in a position to gain an honest livelihood, many more of them would be reclaimed. The chief reason why they resume their former career is, because they have no choice between it and starvation. In returning to society, they find that they have lost caste; their relatives, if they have any, disown them; no sympathy is evinced towards them; no family will take them into its service or give them employment; and in this hopeless condition they are driven to their former habits. Were there any available means of affording them an opportunity of carrying out the resolutions of amendment with which the greater part of them leave the institution, much good might be effected. Many cases could be pointed out of young and friendless females, who, after being cured of their diseases, were admitted into the Magdalen Asylum, persevered in well-doing, and ultimately became good members of society. Others have been restored to their friends and families, and afterwards conducted themselves in a most exemplary manner. A patient, some years ago, manifested much regret for her conduct; she was a superior needlewoman, and expressed her willingness to do well if she only had the opportunity; a lodging was obtained for her in a respectable family; work was procured; and after undergoing a period of trial, she was introduced to her friends, intrusted with the sole management of her father's house, her mother being dead, and after remaining for some time in this position, she was respectably married, and is now the mother of a family. Considerations such as these should convince the most scrupulous, that in contributing to the support of this institu-

tion, they are not only doing an act of mercy to a number of wretched females, but performing a great moral duty to society at large.

The total number of admissions since the founding of the institution to 10th March, 1855, has been 13,575; of these, 13,197 have been cured, 99 have died, and 279 were dismissed for irregularity, but benefited by their sojourn in the hospital. The admissions last year were 430, being an increase of 118 over those of the preceding year. It is satisfactory to state that the average sojourn last year was only 24 days, being three days less than that of the preceding year. This is partly owing to the early admissions, but more particularly to the improved methods of treatment which have been adopted. That which demands particular notice is the erection of a mercurial vapour bath. The necessity for the bath was urged so strongly at last annual meeting by the medical attendants, that the directors readily granted a sum of £10 for this purpose. To make it thoroughly efficient the expense has rather exceeded that sum, but the beneficial effects of that mode of treatment have more than realised the most sanguine expectations. Secondary and tertiary diseases, particularly those of a chronic eruptive character, accompanied by broken-down constitutions, which resisted all other modes of treatment, have yielded to the moist mercurial vapour bath. It is gratifying to find not only that these diseases readily yield under such treatment, but the general health of the patient also rapidly improves.

1854.—Jan. 1. Patients remaining,	21
Admitted since,	430
	— 451
1855.—Jan. 1. Patients cured,	420
Irregular,	7
Remaining,	24
	— 451

Annual average cost of regular patients' cures, £1. 3s. 10½d.

Annual average number of patients nightly in the hospital, 29

Annual average number of patients' nights' sojourn in the house, .. 24

13. *Second Annual Report of the Western Public Dispensary for 1854.*—That the establishment of the Western dispensary has been increasingly useful to the poor of Anderston, and has by them been appreciated, is proved by the experience of the past year.

The statistics show an increase above last year of 119 patients. From the 13th May, 1854, to the 13th May, 1855, 523 persons have received advice and medicine; of these, 137 were males, and 386 females and children under seven years of age—the most helpless and necessitous portion of the community. Of these 523, 389 were natives of Scotland, 122 of Ireland, 10 of England, and 2 of Foreign countries. This year there has been a decrease of 39 males, and an increase of 148 females and children.

The diseases of most frequent occurrence during the past year may be arranged under two heads: first, pulmonary complaints; second, diseases of the stomach and bowels—these absorb almost one-half of the diseases treated.

In the last report, the medical officers suggested that a small hospital should be attached to the dispensary, containing three or four beds, for the reception of urgent cases, and of those applicants whose ailments were of such a nature as to render their treatment as out-patients impossible. The committee beg to press this subject upon the attention of the public—a very small addition to the annual subscriptions would suffice to carry out this suggestion. These beds might be appropriated (1) to female domestic servants, who are obliged by illness to leave their situations, and who have no home in or near Glasgow; or (2) they might be used as an hospital for the diseases of the chest, a species of complaint which prevails to an alarming extent, and which it is impossible to alleviate much while the patients live in the style of house usually inhabited by them; or (3) these beds might be used generally for any such cases as seemed urgent, without reference to sex or age.

The first of these plans would probably be the most successful, inasmuch as it it would, to a certain extent, be self-supporting. Female servants would, it is believed, willingly pay a small sum weekly while reaping the benefit of such an

institution, rather than go to the Infirmary; employers would also in most instances contribute, at least as long as their servants continued inmates. Possibly a combination of plans 1st and 2nd would be the most suitable; in other words, to make these beds available for domestic servants when attacked by any illness, as well as for other females when afflicted by pulmonary or other diseases of the chest.

14. *Thirty-fourth Annual Report of the Glasgow Society for the Education of Deaf and Dumb.*—It appears that in Great Britain there are between 12,000 and 13,000 persons deaf and dumb—the proportion of males being larger than females. In Scotland there are upwards of 2000, or one in 1340 of the population. The institutions for their instruction are in vigorous operation, and continued effort is being made to find out those children of calamity, that if possible, through Christian benevolence or the organized supervision of the poor, they all may be brought from their native imbecility and ignorance to a state of intelligence and active usefulness.

Our own Institution has been the object of much inquiry and interest—every return tending to the general design has been carefully made, and we believe the Glasgow Society has been held in much estimation by those who have been commissioned to make up the census. It has now been thirty-four years in existence. During that time 440 children have been educated and sent out into the world. With very little exception, they are all known to have become good members of society, and many of them to have lived adorning the doctrine and to have died in the hope of the salvation which is by the grace of God our Saviour. The truths of the gospel ever have been, and we trust ever shall be, the foundation and keystone of all the instruction that we afford. Of these 440 children, 351 are believed to have been born deaf—the deafness of the remainder has arisen from disease or accident. Of those who have died, 36 have died from consumption, 13 from fever, 7 from water in the head, 7 from dropsy, 6 from accident, and smaller numbers from other causes. Their deaths have taken place at all the varied periods of life; but it has been ascertained that very few of the deaf and dumb, comparatively, reach a time of old age. Out of 12,000, referred to in the census, only 6 per cent. attained the age of 60.

The number of pupils boarded and educated during the year amounts to 78, within three of the number of the previous year. In addition to the ordinary course of instruction, it has, during the past year, been deemed not inconsistent with our rules to send some of the pupils who have evinced a greater taste for drawing to the School of Design—and there they have made greater progress in that branch of study than they ever did before in the Institution. We cannot doubt that this proficiency will prove most useful to many of them in their after-life. The aim of our teacher always has been to discover wherein any peculiar talent lay in any of the pupils, and as far as possible to adopt means for its development.

In former years the pupils were trained to a great extent to become tailors and shoemakers, these being reckoned the trades for which they were best qualified. Like some other old things, these notions have passed away, and a better and healthier order of occupation has been desiderated. This has arisen from the more enlarged views which are being gradually adopted, the greater energy and talent displayed by the pupils, and the means for attaining the improvement which has been brought within our reach. Instead of tailors, we prefer book-binders or engravers; and in place of shoemakers, we like compositors, or some such occupation where there is less sedentary work. It is well known, and as the statistics before adverted to demonstrate, that almost all deaf and dumb children are predisposed to consumption. Of how much moment, therefore, is it that they be led to such trades as may admit of good ventilation and a measure of bodily exercise. All this, however, we could not accomplish but for the Apprenticeship Fund, which has enabled us to supplement the wages of the pupils during the first year or two while their wages are low; for, as may be supposed in the better class of trades, the apprentices are longer of acquiring skill, and of course receive less remuneration for their work in the earlier stage of apprenticeship.

We think this is a matter which ought to bring in a large amount of sympathy, and sympathy in the only way by which we shall be enabled to continue and extend the system. The Directors would take the present opportunity to acknowledge the very great readiness and kindness with which so many of the first tradesmen of Glasgow have received the pupils of the Institution as apprentices, and it must be very gratifying to them to find our pupils turn out such good workmen as they have done. The testimony of the masters to this effect has afforded the Directors the most sincere pleasure.

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- Twenty-Eighth Annual Report of the Directors of James Murray's Royal Asylum for Lunatics, near Perth, June, 1855.
- Thirty-Fourth Annual Report of the Glasgow Institution for the Education of the Deaf and Dumb, 1855.

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ORIGINAL COMMUNICATIONS.

- I. *On the Therapeutical Properties of some of the more important Articles of the Materia Medica.* By WILLIAM DAVIDSON, M.D., formerly Physician to the Glasgow Royal Infirmary, and Lecturer on Materia Medica.

EMETICS AND PURGATIVES.

EMETIC TARTAR.—Antimony, in some of its forms, has long held a celebrity in the practice of medicine, and has excited much disputation among the members of the medical profession at various epochs of its history. It has, however, unlike a multitude of other agents, stood the test of modern investigation, in spite of scepticism and thundering anathemas. Several of the ancient preparations of this metal are somewhat uncertain, and occasionally violent in their operation; but even those of more modern date, although more certain in regulated doses, have similar characteristics when incautiously employed. The tartrate of antimony and potass is perhaps the most powerful, and, at the same time, the most manageable of them all, and has long been considered a remedy of heroic powers. This term, however, is liable to mislead the young and unwary practitioner; for though it is heroic or powerful in causing vomiting, catharsis, sweating, and in lowering the action of the heart and arteries, it is nevertheless incapable of subduing directly, or as it were by a *coup de main*, fevers, inflammations, and other affections of a grave kind. Apparently the febrile symptoms may be abated, but if it has been employed to an undue extent, feebleness, exhaustion, or a sinking of the powers of life may follow in the train. The primary action of this agent is on the stomach and bowels, causing vomiting and purging. It generally also excites the perspiratory process, and stimulates several other secreting organs, such as the kidneys, mucous membrane of the bronchial tubes, &c. It is one of the most certain emetics, and in those cases of diseases where such treatment is useful, particularly where there is more or less of inflammatory excitement, its accompanying action on the

skin and pulse is highly beneficial. Great caution, however, ought to be employed in its exhibition to infants for this purpose, for most alarming depression of the powers of life have followed its use in such cases. Indeed, with some exceptions, ipecacuan should generally be substituted for it, as the employment of the former is not accompanied with danger. In weak and cachectic adults, it ought also to be avoided as an emetic, being too depressing; or used, in a small dose, along with ipecacuan. In cases of poisoning, where the stomach-pump is not considered imperative, it will generally be found efficacious in evacuating the contents of the stomach; although in some instances of narcotic poisoning, such as that of opium, sulphate of zinc may be preferable.

Inflammatory diseases are supposed to be peculiarly under the influence of tartar emetic, and there can be little doubt that its operation in the treatment of some of these affections is very valuable. It was at one time believed, by Rasori and other continental writers, to possess something like a specific power in the cure of pneumonia, even when it causes little or no evacuation; but this opinion has been found greatly exaggerated by the results of more modern experimenters. Indeed, it has been proved that neither it nor venesection are such sovereign remedies as was at one time believed. It may nevertheless be generally asserted, that tartar emetic is of great utility in the treatment of this disease, by lowering the pulse, and by promoting diaphoresis and expectoration. In cases of pure inflammation of the lungs, uncomplicated with any poisonous or contagious impregnation of the blood, and in young and robust individuals, general bleeding, to a moderate extent, may usually be a component and a primary part of the treatment, to be followed by cupping and blistering the chest; for it would be a neglect of other most efficacious measures to trust to antimony alone, as is sometimes done. In weak, old, or cachectic persons, when general bleeding is inadmissible, antimony may still be employed to a moderate extent, and may frequently be accompanied with the local detraction of blood, or at least with epispastics or counter-irritation of some kind. Again, in cases where the system is contaminated with a febrile poison, the whole of these measures must be regulated with some caution. General bleeding rarely confers any other benefit than a temporary amendment, but it is accompanied with a great evil; viz., the lowering of the patient's strength, and thus rendering him less able to struggle against the depressing effect of the disease. In such cases, small doses of this agent ought to be employed with or without counter-irritation, according to the circumstances or urgency of the case. It is a mistake to suppose that *heroic* treatment will prove the most successful in such affections. In other diseases of the chest, as bronchitis, or such as have a bronchitic character, its employment is very beneficial, and may be given in doses, so as to produce a diaphoretic and expectorant

operation. It is a remedy of considerable power in hernia humoralis. If the patient be strong and healthy, not otherwise, a full general bleeding may be premised, followed by a solution of tartar emetic in combination with a purgative salt, such as sulphate of magnesia, so as to keep up a continuous action on the skin and bowels for some hours. The swelling and inflammation are sometimes very rapidly reduced by such means. If the patient, however, be of a weak or cachectic constitution, leeches ought to be substituted for general bleeding, as the latter might produce more subsequent exhaustion than was justifiable under the circumstances. Acute rheumatism is also, to a certain extent, under its ameliorating influence, although it is by no means certain in its remedial operation; for the disease is often found very intractable and erratic under every variety of treatment. A combination of opium with tartar emetic will frequently be found the most efficacious formula.

Typhus and other analogous contagious affections are very little under the control of this agent. It is asserted by some authors, that typhus can be checked *in limine* by its administration as an emetic; but such statements only prove that febrile symptoms of two or three days' duration have disappeared after its employment; but there is no evidence in this, that the disease was typhus fever, or that the affection was anything else than febricula, or some sympathetic excitement. In the early stages of typhus, when the skin is hot and dry, or where there is an accompanying bronchitis, small doses are useful as a diaphoretic; but, after that stage passes, it is of little benefit in all ordinary cases, and may interfere with other and more efficacious treatment. It has, however, been recommended by high authority, in combination with opium, in peculiar cases of typhus, accompanied by great nervous or cerebral excitement or delirium, as a very certain remedy; but such statements require farther confirmation, in as far as the proportionate amount of ultimate recoveries is concerned; although, no doubt, in many cases, the violent excitement may be overcome. Indeed, opium, in any form or combination, if exhibited in full doses, rarely contributes to the ultimate restoration of the patient.

In certain affections of the trachea and bronchial tubes, such as croup and whooping-cough, where spontaneous vomiting is found to be beneficial, the emetic effects of the tartrate of antimony often cause great ameliorations of the symptoms, by promoting expectoration and the evacuation of mucus from the respiratory tubes. In very young and delicate children affected with these diseases, particularly if their constitutions be weak and cachectic, it is very injurious when pushed to any extent, and is apt to induce a still greater depravity of the circulating fluids by its depressing influences. In the reduction of the larger dislocations, such as that of the hip-joint, this salt has been found very serviceable,

and ought generally to supersede bleeding for this object, as its depressing effect, unlike the other, is only transitory. The intensity of the pain, however, sometimes counteracts the development of its relaxing effects. Chloroform, however, will generally be found more certain in its relaxing powers over the system, and in diminishing the muscular resistance; and such are very legitimate cases for its employment, for the importance of the result warrants the exposure to a certain amount of risk. As an external agent, it is also a valuable remedy when carried to the extent of pustulation. In almost all chronic affections of the chest, abdomen, and joints, its effects as a counter-irritant will be found beneficial; although, in many cases, a succession of small blisters, or an issue over the parts affected, will be found more manageable and efficacious. It is not adapted for the treatment of acute affections, as its action, in exciting pustulation, is too slow. In weak and broken-down constitutions, such as phthisical patients, and in very young children of delicate habit of body, it ought to be employed with due consideration, as deep and troublesome ulceration is apt to occur in such individuals. In these cases a mild preparation ought to be used, as a scruple of the salt to an ounce of axunge. In the eradication of small *nævi* it may be employed successfully, by inoculating the swelling with a strong solution in water.

IPECACUAN.—This is a very valuable medicine, and has long maintained its character for utility. Its action is similar to that of tartar emetic; but it is much milder and safer in its operation. When exhibited in full doses, it acts as a gentle though full emetic; and in delicate individuals, particularly in children so characterized, it should be preferred to the tartrate of antimony. When given in small doses, it seldom causes vomiting, generally a little nausea, and is valuable in promoting a diaphoretic and expectorant operation. In affections of the chest, it is an agent of considerable power. It is serviceable in acute catarrh, by favouring expectoration, and in causing a determination to the skin, thus tending to reduce more rapidly the febrile excitement. In croup and croupy affections, full doses are required; and when vomiting and more or less perspiration are induced, a rapid improvement is often perceptible. Hooping-cough is a disease in which vomiting, particularly if spontaneous, is often of great utility; but if it do not occur in this way, its production by medicine may produce a similar advantage, by promoting expectoration, and diminishing the violence of the cough. If the patient be weak, or if there be much febrile irritation, or any tendency to cerebral disease, the employment of emetics is very questionable. When emetics are advisable in this disease, *ipecacuan* is very suitable for this purpose, and well adapted for children from the comparative mildness of its action. In

asthma it has been exhibited with good effect; although, in general, a combination with opium renders it more certain in relieving a paroxysm. It has also some reputation in the treatment of hemoptysis, and may be of service in some cases, from its nauseating operation, in depressing the force of the circulation; but its virtues, in the management of this disease, have probably been much exaggerated. Spitting of blood is very irregular in its phases, and often subsides or returns, *sua sponte*, without any certainly ascertained influence; it is therefore necessary, in such cases, to give such facts their due weight and consideration.

In some affections of the bowels, ipecacuan is a valuable remedy, particularly if any febrile excitement be present, and it has long and justly been esteemed in the treatment of dysentery. When exhibited alone, its virtues are not so well marked; but when combined with opium and small proportions of calomel, it has great power in controlling the disease. In the severe and epidemic forms of the affection, this method will be found much more successful than large depletion by blood-letting, if combined with counter-irritation, or leeches, to the seat of pain, and occasional doses of a simple purgative, such as castor-oil. When the calomel causes salivation, this result is generally advantageous. In diarrhoea, the pulv. ipecac. c. opio is an excellent formula, and in the more simple forms of the affection will often prove a speedy remedy. In almost all febrile diseases, ipecacuan, in diaphoretic doses, is a valuable adjuvant to the treatment; and when these are accompanied with pectoral or abdominal complications of a bronchitic, pneumonic, and dysenteric character, its utility is more decided. As a certain sudorific, when combined with opium, and accompanied with the proper regimen, its superiority is universally recognised. If, however, there be any indications of the presence of typhus, or fever proceeding from poisonous impregnation, decided inflammatory action, or affection of the brain, the opium should be omitted. As a general rule, Dover's powder answers all ordinary cases as a sudorific; but ipecacuan wine may be combined with laudanum in certain proportions, so as to answer the same purpose. As an emetic to children, ipecacuan wine will be found the most convenient and suitable form for the exhibition of this remedy.

ALOES.—Although aloes is not frequently employed in the treatment of acute diseases, except in combination with some agent of a more powerful kind, it is probably one of the most useful articles of the *materia medica*, in assisting the action of the digestive apparatus, and in aiding the operation of general hygienic measures. If we look at social life, and examine its extreme artificiality in the present day, in as far as regards the essentials for the preservation of health—viz., pure air, exercise, and moderation in living—we cannot fail to draw the conclusion, that some assistance

will, in numerous cases, be required to aid the operations of nature. Of these agents, there is none more important than the one under consideration; for it is the basis of almost all the most useful of our purgative pills. Its action on the bowels is slow but certain, and authors have generally considered the large intestines a special site of its influence. On this account it is believed by many to induce a tendency to hemorrhoids, and to act upon the uterus in a special manner; and there may be a portion of truth in the latter statement, but certainly its tendency to produce hemorrhoids more than other purgatives has not been established. This belief may, to a certain extent, be accounted for by the fact, that aloes is very frequently employed by individuals of a constipated habit of body; and these, as is well known, are the most liable to the disease. In a simply constipated state of the bowels, with or without any particular derangement of the digestive organs, as well as in many chronic diseases so characterized, aloes, in some shape, is the remedy most generally resorted to, and from its efficacy and the convenient form in which it can be exhibited, is well worthy of the confidence bestowed upon it. Indeed, some preparation of this kind is used, either occasionally or habitually, by a large number of people of sedentary habits, even without any special medical advice; and it forms the basis of almost all the laxative and antibilious pills that are vended, both regular and irregular. Indeed, the large proportion of the empirical formulæ of this description, which are said to purify the blood, purge out the contagion of small-pox, cure cancer, and produce an almost antediluvian longevity, contain more or less of this substance. When given alone in very constipated habits, aloes is sometimes not sufficiently efficacious; but this defect is remedied by the addition of scammony and colocynth. Gamboge is also used; but it is somewhat objectionable, as it is liable to gripe, or prove drastic. The compound colocynth pill is one of its best preparations, and, when made according to the rule of the pharmacopœia, generally acts mildly and efficaciously in the proper dose. It sometimes occasions griping in the bowels, particularly if there be any bilious or other derangement of the digestive organs; but if the best quality of aloes be employed, and the rules for the preparation of the pill be strictly attended to, this more rarely happens. Pills compounded of aloes should be recently prepared; for, when hard, they are almost insoluble, and thus produce little action. Such pills, although not advisable under ordinary circumstances, may, in an emergency, be somewhat softened by immersion for a minute or two in tepid water. Aloes is also believed to have some influence over the menstrual discharge, and is often prescribed in amenorrhœa, and when this discharge is diminished. It does not seem to have any special power over this secretion; but, as its action is determined more or less to the large intestines, it may, through

sympathy, affect the uterus, and thus be beneficial. As purgatives or laxatives are generally required in the treatment of such uterine affections, this agent may often be preferred for the purpose. Some authors have stated, that it has a special influence over the biliary secretion. This opinion is not perfectly established, unless it be meant that it acts upon the liver as well as upon the other members of the chylopoetic viscera, which, no doubt, it does; but when combined with calomel, or other mercurial preparation of a similar kind, it generally fulfils the purpose in simple derangements of that organ or its secretions. It possesses also some anthelmintic properties, although not very powerful when taken by the mouth; but its decoction, when used as an enema, is poisonous to ascarides, and a pretty certain remedy for this affection. As already stated, aloes is generally used in the form of pill; but were it not for its very bitter and disagreeable taste, the form of solution in water, with the addition of an alkali, such as potass, or in powder mixed with an aromatic, such as canella, would often be preferable, as the former sometimes passes through the intestinal canal undissolved.

CASTOR OIL.—This medicine has an established reputation, and is likely to be handed down, with undiminished character, to a remote posterity. Its employment by men, women, and children, of all ages and degrees, is of the most extensive and domestic description; and no one dreams of danger in prescribing it without the advice of a medical man, any more than in the administration of water-gruel. It lately was aroused from the even tenor of its way, and was considered on the eve of a colossal fame and an immortal celebrity, by the achievement of a victory over a fell destroyer of the human race. If such had been the result, it would have proved one of the most unexpected and astounding discoveries of the age. Unexpected it would have been, for who would have thought that so simple an agent could perform such marvels? astounding, that the poison of the deadly cholera could be so easily neutralized. It is a pity that this, like many other brilliant theories in therapeutics, has been swamped by that fatal Charybdis, the *post hoc ergo propter hoc*. But though this chimera be exploded, its claims to our support are of no ordinary kind, as shown to some extent by its long and universal estimation. We are not aware of the existence of any accurate statistical account of the quantity consumed in the British isles, but it must be enormous, if any opinion may be formed from the array of bottles, of all sizes, figuring on the shelves and in the windows of the grocer and apothecary. In this latter respect, it outshines its formidable competitor, the cod-liver oil, which, as yet, has not generally ventured into such startling notoriety, but moves quietly along among the public with a financial success, which must be very gratifying to the refiners and chemical doctors, who spend so much of their time and their benevolence in irradiating it with

certificates "a foot and a half long." Can consumption now, with consistency, exhibit its ghastly front in the registers of mortality.

Castor oil, when pure, nearly colourless, and having a mild taste, is somewhat gentle in its operation, causing, in the proper dose, full evacuations from the bowels, with little or no griping, and little exhaustion of the system. It may be given at all ages, from infancy to the oldest period of human life, and in almost all diseases; and, in this respect, possesses properties which belong to few other effective or certain purgatives. There are some diseases, however, in the treatment of which it is more especially indicated. In constipation, it is well adapted for its removal, for it causes little irritation in the mucous coat of the bowels, and injures the tone of the viscera less than those that produce copious watery evacuations. When a bilious derangement accompanies this state, and if the constipation be obstinate, two or three grains of hydrarg. c. creta may be combined with it, by a thorough mixture, and thus insure a simultaneous and more powerful action. When peritonitis, or a peritonitic tendency, accompanies such a state, this combination may generally, in the first instance, be tried, if there be not much attendant nausea or vomiting; for, if retained, its operation will often be followed by an amelioration of the disease. In almost all other affections of the alimentary canal, whether spasmodic, inflammatory, or obstructive, it will also be found the safest purgative. In diarrhoea and dysentery, particularly the latter, where the mucous coat of the intestines is in an excited or inflamed state, it is well adapted for the treatment; and if the disease be accompanied with much fever, and be protracted, may be exhibited every two or three days, with the accompaniment of calomel and opium, counter-irritation, &c. In typhus, and other febrile diseases, it is more certain in its effects, and less debilitating than many other purgatives, and ought generally to be employed for the evacuation of the bowels, particularly in the latter stages of the affection, and in weak and delicate individuals. It is also valuable as a laxative in diseases of the rectum, from its mild action and little liability to cause tenesmus, particularly in hemorrhoids and prolapsus ani. In infants and very young children, affected with an ordinary febrile or other derangement, it is invaluable, and ought, except in special cases, to supersede the use of drastic powders, particularly those containing calomel. It may also be employed in habitual constipation of the bowels, although its nauseous flavour is a great objection to a regular perseverance. It is also the safest purgative during pregnancy, and after parturition.

Many expedients have been devised for its agreeable administration, but most of them with little success. It may be exhibited in warm milk or coffee, or with a little ardent spirit, where this is not objectionable. A drop of some essential oil, such as that

of peppermint or cinnamon, is advantageous; and some aromatic is generally useful in causing its retention when the stomach is irritable. In the form of enema, this oil may often be employed very efficaciously, united to Epsom or other purgative salts, and made into a kind of emulsion with gruel. In obstinate constipation of the bowels, this method of using it should generally be had recourse to.

CROTON OIL.—This oil is a most powerful acrid and drastic purgative in small doses, and is valuable in the treatment of several intractable and dangerous affections. It is particularly in cases where there is more or less inability to swallow, or where bulky medicines are ejected from the stomach, that its importance is recognised. In general, it operates quickly, if no special obstruction of the bowels exist; but it must be employed with discretion, as in large doses it causes vomiting, hypercatharsis, and inflammatory excitement of the mucous coat of the intestines. In apoplectic and other diseases of the head, when it is difficult or even impossible for the patient to swallow even a teaspoonful of liquid, one or two drops of this oil put upon the tongue will often pass into the stomach, and thus act powerfully on the bowels. In lunatic individuals, where there is a similar difficulty from the perversion of the will, and when something of an active kind is wanted, it will often be found practicable in its administration. When constipation has been long continued, and obstinate in its character, particularly if there be much irritability of stomach, and when bulky medicines would speedily be rejected, it is invaluable; and a very convenient method of exhibition is to combine it with the colocynth pill, and give one drop every hour or every two hours, until it operates freely. In certain cases accompanied with intense vomiting, the pill may also contain from a quarter to a half grain of opium, with the addition of a drop of creosote or oil of cloves. By this means the vomiting is often allayed, and the action of the oil supervenes in a few hours, being only delayed, not counteracted, by the opium. It may also be usefully employed in particular habits, as a component part of the colocynth or other purgative pills, when they are found inefficacious, in the proportion of one-eighth or one-sixth of a drop to each pill. All its solutions are acrid to the taste, and therefore objectionable as a mode of exhibition. It has been recommended in dropsical affections, and may occasionally be useful in special cases from its revulsive action, and by causing watery evacuations; but it is not in general the most appropriate remedy for these diseases. In the large majority of cases, it is not well adapted for persons much debilitated, or of a cachectic constitution, nor for children; although, in some affections of the head, it may be necessary to employ it. Some authors have complained of its uncertainty; but this, when it exists, will be found most frequently to arise from its impurity or adulteration, as its high

price offers an inducement to fraud. Endemically it has been recommended in the form of frictions to the abdomen, and in an extreme case such a plan is advisable, although its operation as a purgative, by this method, is very uncertain. Externally it is employed as a counter-irritant in inflammatory and other affections, particularly those of a chronic description, such as bronchitis, rheumatism, neuralgia, &c.; but there is no reason for believing that it possesses advantages superior to cantharides, tartar emetic, &c. For this purpose the oil is generally used without admixture; and when six or eight drops are rubbed on the skin for a few minutes, it causes a redness and gradually a swelling, while, in twelve or twenty-four hours, vesicles appear, some distinct, others confluent. These at first contain serum, afterwards pus, and terminate in crusts. It may also be dissolved in oil or alcohol, and used as a rubefacient.

II. *Case of Turning as a Substitute for Craniotomy.* By ALEXANDER MORTON, Esq. Communicated by Dr. JAMES WILSON, with his Remarks.

MRS. C., a healthy married woman, 25 years of age. I first attended her about two years ago, when in labour with her third child; the head of the child became impacted between the promontory of the sacrum and the os pubis. The patient having been about forty-eight hours in labour, and no progress made for the previous twelve hours, in consultation it was agreed to attempt delivery with the forceps, but I failed, after repeated efforts, to move the head out of its fixed position. Being satisfied that the child had ceased to live, I performed craniotomy, and accomplished the delivery.

Mrs. C.'s first labour was comparatively easy. The second delivery was finished before the medical attendant arrived. It was a foot presentation, and the child was still-born. Both labours were premature. After the first confinement, the patient had a severe attack of what was considered rheumatism about the pelvis, which probably was the cause of the deformity which now exists.

If I had attended Mrs. C. in her second confinement, nature would have taught me the course to pursue in the third. Not expecting any obstruction from a contracted pelvis, labour was allowed to progress until the waters were evacuated. Owing to the reluctance of the friends to manual interference, I was not allowed to attempt to deliver until the life of the mother was at stake. With these facts in view, I was determined, if Mrs. C. should require my services in a fourth labour, to adopt the plan

proposed by Dr. Wilson in an essay on the subject, which he kindly forwarded to me a few years ago. The result has proved highly satisfactory.

I was called on the 1st of August last, about 10 p.m., to attend Mrs. C. in her fourth confinement. The pains had commenced about 3 o'clock in the afternoon, and had continued regular. On examination I found the os uteri dilated to the size of a shilling, the head presenting, and resting on the os pubis. It was evidently thrown forward by the promontory of the os sacrum, and prevented from entering the pelvis. I ordered the bowels to be moved by an aperient. At 2 p.m. on the 2nd of August, the patient was still in labour, the pains being regular and severe, the os uteri dilating slowly, and the membranes protruding slightly with each pain, but there was no change in the position of the presentation.

The patient having now continued about twenty-four hours in labour, and no progress made towards delivery, dreading a repetition of the painful proceeding which occurred at the third labour, I resolved to delay no longer, but to profit by the suggestions thrown out by Dr. James Wilson in similar cases, and turn the child, if possible, before the evacuation of the liquor amnii. I sent for him; and the plan proposed was approved of, as the more likely means to save the child, and save the mother much suffering.

It was agreed to proceed at once. I introduced my right hand into the vagina, passed it easily through the os uteri, and slipped it up between the membranes and walls of the uterus. I ruptured the membranes, grasped the right knee of the child, brought down the breech and left leg; with considerable effort I was enabled to bring down the left arm, then the right arm; the head rested on the brim of the pelvis. I endeavoured to bring it down by introducing a finger of the left hand into the mouth, and at the same time applying traction with the right hand over the shoulder. I was unable to bring it down with such force as I considered safe to use. Dr. Wilson then made trial in the same way. The base of the head was now in the brim of the pelvis, but it could not be brought farther without using such a degree of force as would have destroyed the child. I immediately applied the forceps and completed the delivery.

The child, a girl of ordinary size, was still-born; but by inflating the lungs, and the use of other means, in the space of half an hour the breathing was completely established. Both mother and child continued to progress most favourably, the former being able to be up on the eighth day, and the latter at present alive and well.

Remarks by Dr. Wilson.—This case shows, most satisfactorily, the advantage of turning in those cases where the pelvis is so constructed as not to admit of a child, at the full time, being

delivered without the disagreeable and destructive alternative of embryotomy. There were several circumstances in this case which, without doubt, tended very much to a favourable result. In the first place, Mr. Morton, in anticipation of turning, had taken great care to preserve the membranes entire; this rendered the operation easy and safe to both mother and child. There was also a very great quantity of liquor amnii; and other favourable circumstances, as the unimpaired strength of the patient and energy of the uterus, rendered the extracting force much less than it otherwise would have been had the uterus been passive, or acting irregularly, as it often is in these cases. The last circumstance worthy of notice, was the great advantage derived from the use of the forceps in the speedy delivery of the head. I do believe the child's safety depended on this. The application of the forceps was just as easy as when the vertex presents above the brim; and the extracting force used by the forceps was certainly safer than the same force used by pulling by the body or neck of the child. Besides, the necessary compression of the head may be more effectually accomplished than by the irregular and jutting points of the distorted pelvis: the pressure made by these points may not be on those parts of the head which admit of compression at all; but we are always sure, when the forceps are applied over the sides of the head, that the pressure is made over the whole line of the parietal bones from below upwards—the parts alone capable of being compressed.

It has been stated above, that the forceps were easily applied. I am convinced, from the trials I have made of the forceps in those cases where the head was above the brim of the pelvis, that the application of the instrument is easier than in vertex presentations, because you have the head fixed, and you know exactly its position.

With regard to the extent to which compression of the head may be safely carried, that has its limits, and may, in the most of cases, be carried to the extent of half an inch. Dr. Burns, in a foot-note, page 431, of his *Midwifery*, says:—"The head can bear more pressure before the child is born than after it has breathed. Respiration is more under the influence of the brain than the action of the heart is; and the action of the latter ceases when the brain is injured or compressed, not so much because it is directly affected, as because respiration, with which it is associated, ceases." Be that as it may, no conscientious practitioner would presume upon it; and I do not think Dr. Burns stated this with any view to encourage rashness, or carry compression to an undue length.

In all cases where the head is detained after the delivery of the body, surely the use of the forceps, for the purpose of extracting the head, is greatly preferable to pulling by the

body or neck of the child, whether the detention of the head be from a contracted state of the pelvis, or from any other cause. Baudelocque says, page 124:—"Every one knows the danger to which the child is exposed in those labours where we are obliged to extract it by the feet, especially when the pelvis is rather narrow with respect to the volume of the head. Its death then is almost always inevitable, whether we exert violent efforts on the trunk with a design to extract the head, or leave the delivery to nature, after having disengaged the feet, as some have too generally recommended. In the first case, the child is a victim to the forced extension of the spinal column, the stretching of the spinal marrow which it contains, and the luxation of some of the cervical vertebræ, or of the head itself; in the other, its death is, on the contrary, the effect of the pressure which the umbilical cord as well as the breast suffers in passing the canal of the pelvis. . . . Art holds out but a feeble hand to the child in this unfortunate circumstance, and the most certain of its resources does not always secure the child from the pressing danger which threatens it. Smellie applied the forceps several times with success in these cases, and I have trod in his steps." I need hardly mention that both these authors, and others, have given particular directions, with plates, how the forceps are to be applied when the head is detained after the body is delivered. When lecturing on midwifery, I was in the practice of exercising my students with the delivery of the head in this way, with the forceps upon the machine.

When upon this subject, I may mention that I have met with a species of pelvic deformity in two individuals, particularly well adapted for turning, and which occasioned me a very great deal of trouble and the mothers much suffering, with the loss of several children, before the nature of the deformity was discovered by me. The malformation was this: the lumbar vertebræ were very much curved forward, carrying the base of the sacrum in the same direction, while the lower parts of that bone were bent backwards, forming nearly a right angle with the spine. This inclination of the pelvic brim was at the same time much more inclined than it is in the normal state; in fact, the pubis was almost directly below the projecting promontory. The head of the child was consequently thrown over and upon the pubis, rendering it impossible for the head to enter the brim. An ordinary examination conveyed the impression of extreme want of space, the head lying over the pubis, and the projecting promontory almost directly above it led to the deception, and it was not till after several children were lost that I discovered, by the introduction of the hand to remove a retained placenta, that there was space enough, both in the brim and cavity of the pelvis, and that the child could be easily brought to pass by the feet, while it could never be made to pass by the head, as I

had unfortunately experienced in the former deliveries, without breaking down the head.

There is a notice of this malformation of pelvis in Bland's observations on human and comparative parturition, so much in point that I cannot avoid quoting it. He says—"Although the sacrum may project so much, or advance into the pelvis so far, as to reach within two or three inches of the pubis, consequently the entrance into that cavity would be only of that diameter, if the bones were directly opposite to each other; yet the pubis being placed something lower than the greatest projection of the sacrum, and opposite to a part of that bone that diverges backward, the real distance between them may be much more considerable than to the touch it may seem to be; whence it happens, that in cases where the projection of the sacrum has occasioned exceeding great difficulty in the beginning of the labour, opposing an almost insuperable bar to the entrance of the head of the child into the pelvis, by directing it too far over the pubis; yet, when that direction has been altered by the crotchet, or by any other means, and the head brought into the line of the centre of the pelvis, the conclusion of the labour has been frequently effected with very little exertion or force."—Page 200.

Possibly this abnormal obliquity of the pelvis may exist in different degrees more frequently than is generally supposed. Churchill speaks of this inclination of the pelvis varying from 35 to 60 degrees. In all these deviations the labour must be affected less or more, unless the belly of the woman is pendulous, carrying the uterus so far forward as to make its axis correspond to the altered axis of the pelvic brim. In slight cases of this kind, and where the belly is not pendulous, the difficulty may be obviated by placing the patient on her knees, from which change of position all must have witnessed, at times, very rapid and favourable changes take place in labour, which had previously made no progress for many hours. But in the higher degrees of obliquity, as in those cases referred to above, where the obliquity appeared to be not less than 80 degrees, I am fully convinced that nothing except turning can possibly save the child from its destruction by the crotchet.

By the way, it is a good proof of the success of turning as a substitute for craniotomy, when we see a variety of claims put forth for its paternity. I am convinced Dr. Simpson has the best claim to that honour, particularly as giving it publicity, accompanied with reasons for its preference which appear to me to be quite incontrovertible. It is true, Sir Fielding Ould suggested the same thing in the year 1742, in his work which he published at that time; but he says he never tried it, and it would appear that the Dublin school, of which he was a distinguished member, had either not been aware of his proposal, or had repudiated it, as their practice has been the very opposite

of his conservative plan. Nevertheless, I am sure Dr. Simpson, and every one who entertains his opinions respecting turning as a substitute for craniotomy, will cheerfully yield the claim of priority to their Dublin friends, provided they follow out Ould's views, and adopt turning in suitable cases for it in preference to craniotomy, for which they appear to have had hitherto an unnatural partiality, according to the Dublin Hospital reports.

III. *On the Nature and Treatment of Acute Rheumatism, Illustrated by Cases.* By JOSEPH BELL, M.D., one of the Physicians to the Glasgow Royal Infirmary, &c.

THOUGH modern pathologists are agreed that rheumatism should be classed with blood diseases, yet there is little uniformity of opinion regarding the abnormal condition of the blood that exists. It appears to me, that by tracing the resemblance between the phenomena of rheumatism and those of the other affections in which the blood is disordered, we may be enabled to apprehend more clearly the relation which rheumatism holds to general disease, and also obtain some idea of the peculiar character of the deterioration which exists. Excluding malignant maladies, we may include blood diseases under two heads:—

1st. Diseases produced by a morbid matter taken into the system *from without*, and producing changes in the physiological or nutritive characters of the blood, if not in its chemical constitution. Typhus and the exanthematæ are typical of this class.

2nd. Diseases which depend on the deficiency or morbid alteration of some element which forms an essential constituent of the blood, such abnormal changes originating *within* the body. Scurvy, purpura, anæmia, are typical of this class.

The diseases of the first division are characterized by several phenomena which they present in common. (a.) They most frequently attack people whose system is in a depressed condition. (b.) They are characterized by general functional derangement. (c.) They run, within certain limits, a definite course, during which the morbid agency becomes exhausted, often without any organic disease having been produced. (d.) They cannot be checked *in limine*. (e.) They have anatomical lesions or characters peculiar to each; though these are frequently slight and evanescent, yet they are occasionally severe and permanent. (f.) They leave the patient weak and exhausted. (g.) They are not always of the same degree of intensity; on the contrary, the greatest difference in this respect is witnessed.

Let us now briefly compare with these general characters, those which we observe attending rheumatic fever.

(a.) We find the majority of rheumatic patients possessing little vital energy—they are often badly fed, ill clad, and exposed to the inclemency of the weather. Dr. Todd justly observes that those who are liable to the disease, possess decided marks of impaired nutrition: “there is great pallor of the skin, a cachectic appearance—a greenish or yellowish hue tinges the surface, and the red particles of the blood are deficient; the patient is then indisposed for business or amusement; the appetite fails, and the patient is keenly sensitive to vicissitudes of temperature.” No doubt cases are occasionally met with among apparently strong and robust people after exposure to cold. On inquiry, however, we will never fail to discover that either prior to, or simultaneously with such exposure, the patient’s health had been to a greater or less extent deranged.

(b.) The attack of rheumatism is ushered in by a rigor; this is followed by febrile excitement; next, articular pains and general derangement of all the functions—the stomach, liver, kidneys, and occasionally the brain.

(c.) If the disease be allowed to run its natural course, it will, in the large majority of uncomplicated cases, cease within two weeks, leaving the patient weak, but free from organic disease. Dr. Todd fixes the mean duration rather beyond three weeks. Other authorities, however, have found the period much shorter. We shall have occasion to refer to this point at another part of this paper.

(d.) It cannot be checked *in limine*. Various—indeed, I might say innumerable—are the plans of treatment which have been advocated for cutting short an attack of the disease. A careful examination of the details will show that the duration of the majority of the published cases, no matter how treated, exceeded fourteen days from the date of rigor, till convalescence was fairly established. This result has taken place under the most opposite modes of treatment.

We are justified in concluding, under such circumstances, that the patients got better, independent of the remedies exhibited. When we find various plans of treatment recommended in any disease, and the result nearly similar, we may safely infer that nature and not the drug effected the cure. Cases of rheumatism, reported to have been cut short within eight or ten days, may have been slight attacks, occurring in robust habits, in which the disease runs a much shorter course than in the debilitated; and it will be seen, in an after part of this paper, that not unfrequently very acute attacks subside within ten days. I therefore contend, that however much we may succeed either in modifying the intensity of the disease, or in preventing important organic changes, we cannot cut short an attack. On the other hand, it must be admitted that often the disease is seriously prolonged by too active and injudicious treatment.

I am not singular in holding this opinion—it is entertained by many acute observers. Dr. Fuller, in his excellent treatise on Rheumatism, remarks—"The question arises as to whether acute rheumatism may not be immediately arrested by treatment? Dr. Macleod and many other practitioners have maintained, not only that the paroxysm may be shortened, but that, if treated vigorously at first, it may be at once cut short. My evidence, however, must be given in opposition to this pleasant theory. Whilst I was following the practice of Messrs. Chomel and Rostan, at the Hotel Dieu at Paris, I paid great attention to all the cases of rheumatic fever. I have watched with equal care all the cases admitted into the wards of St. George's Hospital during the greater part of the last ten years, and in my own practice at the hospital and in private life, have tested the value of different modes of treatment; but it has never been my lot to witness the results ascribed by different gentlemen, each to his own particular remedies. Doubtless, instances are occasionally met with, in which the disease subsides almost immediately under treatment; but such examples are rare, and in my observation have occurred indifferently under all plans of treatment. The favourable result is referable, probably, to some change induced in the functions of assimilation, by agencies altogether beyond our ken; and it occurs so seldom, that it cannot be fairly cited as indicating the possession of a power to arrest or cut short the disease.

"With regard to the great majority of such cases, another very simple and obvious explanation is applicable; namely, that the duration of the disease is reckoned from the first commencement of the treatment, and not from the actual beginning of the attack. I have seen several patients recover within four or five days after admission into the hospital; but in three cases only, under the usual methods of treatment, have the symptoms been thoroughly subdued within fourteen days from the commencement of the attack. In almost every instance of supposed rapid cure, investigation has shown the attack to have commenced some ten days or a fortnight prior to the patient's admission into the hospital—a sufficient explanation of the marvellous rapidity with which the symptoms have subsided."*

(e.) *Anatomical or Local Lesions*.—In rheumatism, the local disorder is a peculiar congested condition of the fibrous and muscular tissues, the fibrous expansions about the large joints and the pericardium being the parts generally involved. Bichat held the opinion, that this pathological condition of the joints was of a genuine inflammatory nature, that the disease was simply inflammation of the fibrous membrane; but this notion has now become exploded. It appears to me that there is a

* Dr. Fuller on Rheumatism, pp. 68 and 69.

very close resemblance between the conditions of the rheumatic joint and the state of the skin in scarlatina, and I strongly suspect that the anatomical characters of the so-called typhoid fever stand in the same relation to true inflammatory action, as the condition of the fibrous tissues holds to rheumatism. Doubtless, in all these diseases, instances are met with in which structural changes take place. In the rheumatic joint, true inflammatory action may supervene. In scarlatina, a genuine cellulitis not unfrequently ensues, and in typhoid fever dothenteritis often takes place.

In all probability, the pathological condition of the pericardium is not at first of an inflammatory character. During the course of the disease we often meet with *bruits* of a temporary character, disappearing without any treatment, and leaving not a trace of disease behind. Again, we must not forget that a state of congestion of the pericardium, even of much less extent than that which we see about the joints, will, from the anatomical and physiological relations of the parts, prove a much more serious matter—indeed, must inevitably, if long continued, induce a true endo- or pericarditis.

The liability to this disease points out another mark of resemblance to fevers. In each of the latter maladies we have a series of lesions:—1st. The contamination of the blood. 2nd. The peculiar local disorder. 3rd. Other occasional or tertiary lesions. Thus, in scarlatina, we have first the febrile excitement; secondly, the local disease of the skin and throat; and thirdly, the renal affection. We observe similar circumstances in the other exanthematæ; and in rheumatism we have, first, the pyrexia, secondly, the affection of the joints, and thirdly, the cardiac disease. In all these maladies, the tertiary lesions are not so frequent or regular in their appearance as the secondary.

This leads me to remark, that in rheumatism we observe a circumstance which is well marked in the other fevers, namely, that the amount of local lesion holds no relation to the severity of the attack. How often do we meet with cases of exanthematæ in which little or no secondary affection takes place? Yet such cases are frequently most fatal. How often do we meet with cases of great severity, becoming much mitigated on the appearance of the local lesion? How frequently do we meet with very formidable instances, in which tertiary lesions present themselves instead of the secondary; and, as soon as the latter make their appearance, the others subside?

In rheumatic fever we observe the very same occurrence, so much so, that I am forced to the following conclusions:—First, that the liability to cardiac disease holds no relation to the severity of the articular affection; and secondly, that the articular inflammation does not hold an essential relation to the

severity of the fever. We may have the fever without the local disease, and we may have the local affection unattended with much febrile excitement. The observations of Dr. Groves on these points are well worthy of attentive consideration. He remarks, "that the fever usually accompanied by inflammation of the joints, and termed rheumatic fever, is a fever *sui generis*, and as readily distinguishable from the fever caused by inflammation, as is the fever of typhus, small-pox, or measles. In truth, in rheumatic fever, the quickness of the pulse, heat of the skin, tendency to profuse sweating, debility, restlessness, and thirst, may all exist without any inflammation of the joints, and may be resolved without such inflammation ever occurring; as I have witnessed in several well-marked cases of individuals liable to rheumatic fever, and who had previously suffered from attacks from fever, with arthritis, in the usual form; and subsequently, on exposure to cold, were seized with symptoms of pyrexia, which, in intensity, duration, and every other particular, were identical with their former fevers, save and except that, from beginning to end, not a single joint was inflamed. . . . These considerations are of practical interest, and prove that, in the treatment of acute rheumatism, we cannot hope to cure the fever directly by means which merely tend to get rid of the articular inflammation. *As arthritis may exist without rheumatic fever, so rheumatic fever may exist without arthritis; when combined they each aggravate the other, but the cure or disappearance of one does not necessarily determine the removal of the other.*"*

Dr. Fuller states, that "one of the most remarkable and suggestive facts in regard to rheumatism is, that the fever and constitutional distress are not commensurate with the extent and severity of the local symptoms." In speaking of the *materies morbi*, the same excellent writer states that sometimes articular affections do not take place, but acute inflammation of the heart is set up. He has "met with several instances in which the development of rheumatic fever has been complete, and in which, nevertheless, the articular and other local symptoms have been slight and evanescent."† These observations have been amply confirmed from the time of Sydenham to the present day, and authorize the conclusion, that the articular affections stand in the relation of the anatomical character of rheumatism, and may vary in intensity, in some instances being almost absent, in others aggravating the constitutional disturbance, which, however, is entirely independent of such local manifestations, just in the same manner as, in the other fevers, the febrile excitement precedes, and is altogether independent of, their anatomical characters, which, however, occasionally augment the constitutional derangement.

* Clin. Med., vol. ii., p. 159.

† Op. Cit., p. 29.

(f.) Rheumatic fever leaves the patient in an exceedingly debilitated condition. We cannot fail to observe the pale, emaciated, and feeble state of those who are beginning to recover from an attack. Indeed, their appearance closely resembles that of patients convalescent from typhus.

(g.) Rheumatic fever is not always of the same duration and intensity. In some, the attack subsides in a few days; in others it continues fourteen days, and occasionally may run a protracted course of many weeks. It may, however, be laid down as a general rule, that the duration and intensity of attack hold a tolerably exact relation to the tone of the patient's constitution—the more vigorous, the shorter and milder, and *vice versa*. This irregularity in the severity of the cases leads to grievous errors regarding the efficacy of medicines. It proves a fertile source of fallacy in estimating the comparative effects of different plans of treatment.

Besides these points of resemblance which acute rheumatism has to fevers, we may also advert to the fact, that rheumatic pains are associated with the phenomena of some of those affections, such as the yellow, relapsing, or gastro-hepatic fever. When this fever was epidemic in 1843, the frequency with which the large joints were attacked, with all the peculiar characters of articular rheumatism, attracted the attention of every practitioner, as being one of the most frequent complications—a condition, however, which did not yield to antiphlogistics, but to tonics and stimulants. Again, muscular rheumatism is one of the most constant symptoms of epidemic catarrh, or influenza. And lastly, it is a matter of observation, that rheumatism prevails when erysipelas, typhus, and other allied affections are epidemic.

By carefully reflecting on the clinical history of rheumatism, we find that, in its general character, it is intimately connected with the above-named diseases—affections depending on an altered condition of the blood, and characterized by a depressed state of the system. Who are the victims of rheumatism? Are they not the ill-clothed, badly fed, and the dissipated? Under what circumstances does it make its appearance? Is it not during a state of depression, long exposure to cold or damp, especially after exertion?

I have already quoted the observations of Dr. Todd on this point. Dr. Fuller states, that “those persons are naturally the chief sufferers who, through want and privations, irregularity of life, and neglect of their general health, are rendered most liable to that state of mal-assimilation, whereby the *materies morbi* is produced, and who, again, from the nature of their occupations, are most exposed to atmospheric vicissitudes and other exciting causes of the disease.”*

* Op. Cit., p. 37.

Though rheumatic fever presents general phenomena similar to those observed in other fevers, yet points of great dissimilarity also exist. The question, therefore, presents itself, on what does the similarity and dissimilarity depend? The answer is obvious. They must arise from the nature of the respective causes. It is notorious that different poisons have separate modes of action, and each produces its own peculiar effect, whilst they all, more or less, agree in their general results. Typhus and exanthematous fevers originate from the absorption of a morbid poison from without. This so modifies the whole functions of the body, as to lead, more or less, to their interruption, and when recovery takes place it is chiefly brought about by the physiological powers of the system overcoming the pathological influence of the poison. We further observe, that each kind of fever has its own peculiar characters impressed on it, in consequence of the difference that exists between the respective poisons.

In rheumatism, on the other hand, the morbid poison *originates within the body*, and exercises its pathological influence on the fibrous and serous tissues, and recovery is effected principally by the physiological powers of the system. Thus we easily perceive the sources from which the resemblances and the differences in the phenomena of these allied diseases originate. On the one hand, exanthematous and typhus fevers depend on the presence of a morbid poison *absorbed into the system*; on the other, rheumatic fever arises from a morbid poison *generated within the system*.

This leads us, in the next place, to the comparison of the phenomena of rheumatism with those affections included under the second division of blood diseases, viz., diseases which depend on the deficiency or morbid alteration of some element which forms an essential constituent of the blood—such abnormal changes originating within the body. Modern pathologists have subdivided this class of diseases into two sections:—1st, Diseases produced by a morbid matter originating in an abnormal *chemical action* in the blood itself, taking place during the period of secondary assimilation, and often depending on deficient excretion. 2nd, Diseases arising from a simple deficiency or alteration of some of the constituents of the blood.

It is the favourite theory of the day to ascribe rheumatism to the first, and scurvy, chlorosis, &c., to the second division. Dr. Todd observes, “that the tissues which belong to the gelatinous and albuminous classes are chiefly composed of those proximate elements, from the decomposition of which, in the wear of the system, three great secondary organic compounds—urea, lithic acid, and lactic acid—are produced.” In rheumatism, it is alleged that, in consequence of an abnormal chemical change, these products become deranged—lactic acid predominates, and pro-

duces the phenomena of the disease—it is the real *materies morbi*. The same author adds, that “the imperfect assimilation and vicissitude of temperature induce an accumulation of fibrine in the blood; hence the increase of lactates in the perspiration and urine.” In other words, from the mal-assimilation and excretion of the effete fibrinous tissues, and from exposure to cold, checking perspiration, this fibrine is converted into lactic acid, which attempts to find its exit through the skin. In the language of Dr. Prout, “on these suppositions we may explain the formation of the large quantities of lactic acid usually present in rheumatic affections.” Thus we have the disease placed in direct opposition to gout, in which the lithates prevail—uric acid being considered the *materies morbi* in this affection. When the case is of the hybrid character, denominated rheumatic-gout, then it is affirmed that both lithic and lactic acid abound in the blood. Or, in other words, the uric acid is content to direct its operations against the *small joints*, whilst it leaves the more dignified assault of the *large joints* to its ally, the lactic.

It is amusing to hear some of the small fry of the profession confounding these two supposed conditions of the blood. It is not uncommon to find practitioners treating rheumatism by remedies calculated to decompose lithic acid. These gentlemen plume themselves for acting on scientific principles, whilst the very leviathans which they attempt to follow, affirm that such a substance is never present in rheumatism, unless the complication of gout exists. Indeed, the advocates of the lactic acid origin of rheumatism are very apt to dazzle even the most cautious, by the beautiful formula which they produce.

The chemical symbols, $10 \text{ Pr} + \text{SP}_{\frac{1}{2}}$ (fibrine), $\text{C}_2 \text{H}_4 \text{N}_2 \text{O}_2$ (urea), $\text{C}_{10} \text{N}_4 \text{H}_4 \text{O}_6$ (uric acid), $\text{HO}, \text{C}_6 \text{H}_6 \text{O}_6$ (lactic acid), and those of a few other organic compounds, are placed on the black board; decompositions and new combinations are so beautifully and scientifically sketched, we feel almost ashamed to harbour a doubt that such changes actually take place in blood. If we have courage to withstand the teachings of this romantic pathology, we must be content to be viewed as insensible to the claims of true science. If we strip away the gaudy tinsel trappings with which fancy and imagination have adorned this subject, we will find ourselves in great darkness regarding, not only the nature, but the very existence of any such elaborate transformations as we find drawn up by disciples of this kind of pathology. They resemble very much the painters of the old French school—their pictures are representations of ideal and not of natural existences.

This is too grave a subject to be treated with levity or ridicule, because the fashionable *eliminative* treatment of rheumatism is founded on this very theory, one which obviously embraces three considerations:—

1st. The alleged primary cause, namely, deficient excretions.

2nd. The effect of which is to set up an abnormal chemical change during secondary assimilation, and thereby, in the third place, lead to an accumulation of effete tissues, and consequent generation of lactic acid, the supposed *materies morbi*.

1st. *Deficient Excretion*.—The kidneys and the skin are considered as the two eliminating organs principally at fault in rheumatism, being viewed as the two depurating organs of the blood from its effete tissues. It is entirely overlooked that the excretions formed by these organs are taken from *arterial* blood. In fact, the skin and kidneys are thus made to *purify* that which is already *pure*. Doubtless, some physiologists of great eminence, perceiving this difficulty, have attempted to convince us that the principal part of the urinary secretion is formed from the capillary veins which surround the tubuli uriniferi—that we have in the kidneys a venous system analogous to the portal. This special pleading should not delude us, when we have before us this important difference, that the veins of the kidneys receive their blood from the capillaries *only of the renal artery*, whilst the portal veins receive the contents of the various tributaries from the chylopoietic viscera. It has not been shown that the blood in the emulgent veins is *purier* than arterial blood; on the contrary, the contents of these vessels have all the characters of venous blood—deficient in all nutrient properties, and returned to the right side of the heart to be transmitted to the lungs for *purification*.

The same remarks will apply to the skin. The excretions of this extensive and complex organ are formed from arterial blood, which afterwards passes into the venous capillaries, and is returned to the heart as contaminated blood.

That the skin and kidneys exercise most important influences on the conditions of the blood in relation to its nutritive qualities, cannot be doubted. It is not my object at present to enter on the discussion of the nature of these influences, but to expose the fallacies which abound in the chemico-pathological fashions of the day, especially in reference to the disease under consideration. If we would reflect on that which we really do know of the functions of the kidneys and skin, we would not so readily adopt such evident absurdities. We are almost entirely ignorant of the physiology of the excretions. Thanks to Bernard, we are beginning to gain some knowledge of the hepatic functions; but if we sit down and carefully analyse the various theories, we will find the whole subject involved in a perfect chaos,—speculative notions obscuring the few facts which have been demonstrated.

From the foregoing observations we are entitled to conclude, that we have no evidence that any morbid poison or agency is

introduced into the system in consequence of deficient excretion. If, therefore, the alleged cause cannot be demonstrated, it follows that the supposed effects must be less capable of proof. It may be said, however, that the deficient excretion is only by some considered as a probable explanation; and we may have the abnormal conditions of the blood present, though erroneous opinions exist as to their production. There is sufficient force in this remark to entitle us to take these supposed conditions into consideration.

The Abnormal Changes which take place during Secondary Assimilation.—It is beyond dispute that the blood is altered, in its relation to nutrition, during an attack of rheumatism; but chemistry has not yet demonstrated either how this alteration originates, or in what it consists, and much less has she expounded its laws. Again, we have to observe that we have no definite notions of the physiology of assimilation; until we understand the laws of the healthy processes, it is highly presumptuous to attempt to fix those of disease.

Assimilation is a most complex process, consisting of several independent, yet allied operations:—

1st. We have the digestive or chylous, including all those complicated changes which the stomach and its accessory organs produce on the food, from its ingestion till its conversion into chyle.

2nd. We have the lymphatic assimilation, namely, that which takes place on the effete tissues in the lymphatic system, ending in the formation of that fluid called lymph.

3rd. We have the assimilation of those two fluids into blood during the passage through the lungs. This may be called pulmonary assimilation.

4th. We have the ultimate conversion of the constituents of the blood into the different tissues of the body. This may be denominated structural assimilation.

5th. We have certain portions of the blood assimilated into peculiar secretions by the excreting organs: some of those secretions are sent into the system, and play important parts in nutrition, others are thrown out as excrementitious.

How little information does chemistry afford on any of these important processes? We have been made acquainted with the composition of the solids and fluids, and the difference which exists between their elements. No light, however, has been thrown upon the mode in which the various processes are performed, or how abnormal conditions arise. Has chemical science unfolded to us the manner in which elements become transmuted into chyle,—how the effete tissues are changed into lymph? Has she either demonstrated how these fluids become re-animalized in the lungs, or shown how the blood becomes converted into tissues? No doubt we find abundant

theoretical explanations; but we look in vain for anything approaching to a demonstration.

So long as we are ignorant of the physiology of assimilation, we must remain in darkness regarding its pathology. All deductions, in the meantime, are nothing better than fanciful conjectures. It cannot be questioned but that the derangement of any of the assimilating processes will necessarily produce a deteriorated condition of the blood; but it is mere romance to affirm, that certain diseases depend on morbid changes induced during secondary assimilation by a morbid agent, the product itself of the imagination. It is a very easy matter to take certain organic fluids and submit them to analysis, to place their symbols on paper, and then to explain supposed mal-transformations by tracing new combinations among the elements. But, I repeat, all this is mere speculation. We have no evidence that any such changes take place in the blood of the patient. Are we not, therefore, justified in concluding, that we have not the slightest proof that any such abnormal chemical change takes place during secondary assimilation as is affirmed to occur in rheumatism?

3rd. Let us, in the third place, examine the doctrine of the origin of rheumatism from the non-conversion or elimination of the effete tissues.

These originate in all the structures of the frame; their greater portion, if not all, are taken up by the absorbents, and pass through the extensive system of lymphatics, and become converted into lymph, a fluid nearly identical in composition with chyle, and is poured along with it into the mass of venous blood previous to its entrance into the right side of the heart, to be sent through the lungs, and returned as pure arterial blood to the left auricle. A portion of effete matters is said to be taken up by the veins. If any change be effected on them in these vessels it is unknown to us, but in the lungs a transformation undoubtedly takes place. The lymphatic glands and the lungs appear to be the only converting or assimilating organs, to the agency of which the effete matters are subjected. It is worthy of remark, that the lungs do not act on these broken-down tissues in their effete condition, but when they have become converted into lymph; just in the same way as it is upon the chyle that the functions of respiration act, not on the unconverted food. The lymphatic system stands in the same relation to the reduction and digestion of the effete tissues, and their transformation into lymph, as the stomach and its accessory organs hold to the decomposition of the food and its conversion into chyle. Both chyle and lymph are the products of a most complex and elaborate series of changes, the nature of which chemistry has not discovered, and of which we can only judge by the results. It has been argued that the blood is a vital fluid, possessing in itself the power of effecting chemico-vital changes, and that its own

constituents are elaborated within its vessels to the highest degree of animalization. These views are very plausible, and it may be admitted that their correctness is within the limits of possibility; but, on the other hand, we know that the blood, when it enters the left auricle, is endowed with its nutritive properties, so far as *force* is concerned. No doubt a further *force* is required to apply this arterial fluid to the renovation of the tissues. However, the action of this *force* does not tend to give the blood a higher degree of vitality, but the very reverse, reducing its nutritive powers, and changing it into venous blood.

We therefore perceive that we have no proof of any such abnormal transformations taking place in the assimilation of the effete tissues, in consequence of deficient excretion, as is affirmed to occur in rheumatic fever. All the knowledge that we actually possess regarding these tissues, proves that such changes are highly improbable; consequently, the fashionable explanation of rheumatic fever becomes, as is too often the case in our profession, mere high-sounding pretensions. No doubt a piece of chalk, a black board, a retort, and an ingenious mind, can exert magical transformations among chemical symbols. In the laboratory and the closet, the pathological chemist may not be inaptly compared to the pattern-drawer with his kaleidoscope, every turn of the cylinder producing new and beautiful figures, by the mere change of position among the few fragments of glass. So the chemist, by the transposition of his few elements, can effect startling changes.

I by no means wish to disparage pathological chemistry. My object is to save it from its friends, whose overheated zeal will undoubtedly bring it into discredit. The whole subject is in its merest infancy, as yet only imbibing its support from the retort, chalk, and water. It is not in a position to dictate laws to pathology and therapeutics, but, on the contrary, to draw its materials from their ample stores, until it arrives at maturity, when we trust it will fully repay both, by enabling us to explain their phenomena, bestowing on them the character of fixed sciences, and in this way extracting a genuine philosophy from the crude observations which the experience of centuries has collected. It appears to me, that until this happy era arrives, it is the duty of the physician not to be led away by high-sounding pretensions, but to observe carefully the phenomena exhibited by disease, especially in reference to its association with a sthenic or an asthenic condition of the system—whether the functional activity is increased or diminished. Applying this rule to both classes of blood diseases which we have examined, we find in all that the vital powers are depressed. "The peculiar constitutional state," observes Simon, "is one essentially of depression."

The examination which we have made of the characters of rheumatism leaves no doubt of its intimate relation to both

classes of blood diseases. Even admitting the probability of the chemical theory of the origin of the affection, such a condition as is alleged is one essentially of debility, the effete tissues must contaminate the blood, and in this way disturb its nutritive relations.

Let us next compare the state of the blood in rheumatism with the condition that exists in diseases belonging to the second division; viz., those depending either on deficiency or altered condition of some of the essential constituents of the fluid.

The examinations which have been made of the blood drawn from rheumatic patients clearly establish two things:—First, That the fibrine is increased. Secondly, That the red globules are diminished. These two facts intimately connect the disease with anæmia, and other diseases of a low character, showing most clearly that rheumatic fever depends on a derangement in the nutritive relations which exist between the blood and the fibrous and muscular tissues. Simon, following Zimmerman, regards the fibrine of the blood as originating from the effete nitrogenous tissues, and not, as is usually considered, the highest product of assimilation. In this way he accounts for the presence of the high amount of fibrine in the blood, and the supposed excess of lactic acid. I say supposed, as its presence in the blood has not been satisfactorily demonstrated. Though these views are highly plausible, yet we can more readily account for the state of hyperinosis on other grounds. Whenever the nutrition of the fibrous or muscular tissues becomes deranged, the quantity of fibrine must be altered, whether that derangement arises from local or general causes—whether the disease originates in the tissues themselves, or in the blood.

If from mal-assimilation an imperfect fibrine be elaborated, the nutrition of the tissues will become deranged; if, on the other hand, the structures become unable to convert the fibrinous constituent of the blood into their own structures, we will have the constitution of the blood altered; hyperinosis, in both cases, will be the result. In the present state of medical science, we are not in a position to give this matter a satisfactory explanation. In the meantime we should rest content with the knowledge, that in rheumatism we have too much fibrine in the blood, and too few red globules; these two circumstances connecting the disease with anæmia, phthisis, &c.

Besides Dr. Todd, Dr. Fuller, and Mr. Simon, already quoted, other able and accurate observers have pointed out this anæmic character of the disease. Dr. O'Ferrall has published some excellent remarks on this subject in the *Dublin Press and Medical Times*, Sept. 10, 1849. From repeated observation, "he has been led to the conclusion that the natural tendency of the disease, in its advanced stages, is to produce a diminution of the hæmotosin of the blood." He has frequently detected anæmic

murmurs over the heart, and the cervical vessels disappearing under the use of chalybeates, as in ordinary chlorosis. In an able paper on Tropical Rheumatism, read at a meeting of the Harveian Society, Jan. 16, 1851, by Dr. James Bird,* we find similar observations on the asthenic form of the malady:—"In all," he observes, "the sudden or continued influence of damp, cold, malarious air, by producing a powerful impression on the skin and nervous system, might be set down as the first link in the chain of changes connected with the generation of *materies morbi* in the blood. The equilibrium of healthy nutrition was disturbed, the tissues ceased to appropriate true nutritive materials, and the assimilating functions of the stomach and collatitious viscera were deranged."

Numerous quotations of the same character might be made, all confirming the doctrine of the asthenic nature of rheumatism, and all pointing out the existence of altered nutritive relations between the blood and the muscular and fibrous tissues. The origin of this disordered nutrition is unknown. Undoubtedly there exists something in the disease beyond the mere hyperinosis of the blood, and diminution of the hæmatosin, that induces a morbid tendency to deposition of fibrine. This cause, so far as we know, seems to be generated *within* the blood. It is quite possible, however, that it may have an *external origin*. Be this as it may, it must appear obvious that this disorder of the nutritive relations is also the first evident link in the chain of morbid processes observed in typhus and exanthematæ. In these affections the forces of nutrition are disturbed by the influence of morbid poisons absorbed from without, and affecting such modifications of function, that the patient not unfrequently sinks under the disease, without presenting any tangible trace of structural change.

Again, in the second division of blood diseases, we have nutrition modified in consequence of derangement originating within the system, and ultimately involving all the functions, and often producing structural changes. In rheumatism, we have seen that the same disordered condition of the nutritive forces exist, the *materies morbi* of which, in all probability, originate within the system, but producing high constitutional excitement in all cases, whatever may be the extent of the local suffering, which is merely an associated condition of the general disturbance. Rheumatic fever, therefore, partakes of the character of both classes of blood diseases; its general phenomena connecting it with those of the first, and its origin from causes generated within the system, as well as the condition of the blood itself, associating it with those of the second division.

Abnormal alterations or modifications of nutrition are the *fundamental bases* from which all these affections spring, the

* Medical Gazette, p. 161, vol. xii., new series.

difference in their respective causes giving rise to the diversities which their phenomena exhibit.

The following objections may be urged against the asthenic nature of rheumatism :—

1. The state of the joints.
2. The existence of hyperinosis points to a sthenic condition of the system.
3. The state of the pulse.
4. The high-coloured and scanty urine.
6. The beneficial effects of antiphlogistic treatment.
7. The frequency of cardiac disease.

1st. *The State of the Joints*.—This pathological condition cannot be viewed as a genuine inflammation. The rapidity with which the swelling and redness subside, and fly about from one joint to another, without leaving any structural change, settles this question.

2d. *The Increase of Fibrine*.—This we find occurs with as much regularity in anæmia, phthisis, and other diseases connected with depressed conditions, as it does in the most acute inflammations. We also know that the fibrine, instead of being diminished by bleeding, is actually increased; and, again, we must bear in mind that there is a deficiency of the red globules in rheumatism.

3d. The pulse in rheumatic fever is doubtless full and bounding, but this does not indicate augmented vital power, but the reverse. The pulse is always easily compressible; in fact, it is not the pulse characteristic either of congestion or inflammation, but the one distinctive of “excitement without power.”

4th. Though certainly the urine is high-coloured and scanty, and deposits lithates largely, yet it does not follow from this that the disease is one of an inflammatory character. In phthisis, and other affections of debility, we have the same circumstances occurring. The excessive perspiration which generally takes place in rheumatism will affect the quantity of the urine; and the hyperinosed state of the blood will account for the increase of deposits. Becquerel mentions a curious fact regarding the urine of rheumatic patients; viz., that immediately after a large bleeding, the urine assumes all the characters of the secretion in anæmia.

5th. *The Occurrence of the Pericarditis and Endocarditis*.—Here it may be triumphantly said, you must admit that we have a true and genuine —itis. I have already pointed out, that at first we may have a mere congested condition of the fibrous membranes of the heart, ending in effusion, just as we see taking place about the joints; but that the anatomical relations of the coverings of the heart are such that these conditions cannot exist for any length of time without producing organic disease.

Mr. Simon justly remarks, that “on the supposition that these

vegetations are inflammatory effusions from the membrane, I should be quite unable to explain why they should almost entirely confine themselves, as they do, to the valvular apparatus, and why their predilection for the left side should be so great, that the right is very rarely affected, perhaps never, except where the left has first suffered, and where the disease has been of such extreme intensity, that even its weaker affinity for the right side has been able to manifest itself. The opposite doctrine is the more tenable one. I believe that the origin of these vegetations is directly humoral—that they arise as fibrinous precipitations from an overcharged solution, the valves encrusting themselves with fibrine. . . . The disease in which these deposits are so frequent is one of intense over-fibrination of the blood, and one in which almost certainly there are other conditions, besides quantity, making the fibrine easy of precipitation. . . . Many people bleed locally, or even generally, when they hear an endocardiac murmur arising in the course of rheumatic fever. In their eyes the new disease is endocarditis, and everything ending in *itis* is thought, in at least a majority of instances, to be benefited by bleeding. Therefore, gentlemen, do not be in a hurry to call it endocarditis; and as for bleeding, all that I would venture to say (for, of course, the treatment of this physician's disease does not fall within my province), is to assure you of the pathological fact, that you may bleed a patient to death, without altering, except probably to increase, the proportion of fibrine in the blood.”*

It is almost unnecessary to say, that I fully concur in the above views held by this enlightened physiologist. Even when endocarditis does take place, it by no means follows that rheumatic fever is of a sthenic character. The endocardial complication may result from the precipitated fibrine.

6th. *The alleged beneficial effects of Antiphlogistic Treatment.*—By a careful examination of the cases so treated, it will be found that this active treatment is by no means universally successful, the attack often lasting beyond one month. M. Bouilland's thirty-six cases had an average duration of four weeks. Dr. E. Monneret† has made some interesting observations on this point. He bled in nineteen cases with freedom, and the result he states to be, that the patients thus treated remained in the hospital as long as those treated by other remedies. He concludes by stating, that “when the symptoms are not relieved by the blood-letting within the first four or five days of the invasion of the disease, it is in vain persisting in the abstraction of blood. The practice then is only injurious. Bellows murmurs are set up in the heart and great vessels, the surface becomes drenched in sweat, the sleep is disturbed, the pulse is rapid, and the pains,

* General Pathology, pp. 55, 56, 57.

† Archives Generales de Médecine, Mai, 1844.

far from diminishing, flit about from one joint to another, or remain obstinately fixed in those that were first attacked." In other words, depletion only reduces the patient, and renders his recovery more difficult. I have carefully read over numerous successful (?) cases treated by blood-letting, and I find that when the attack was of a short duration, the patients were of robust habits, a class of persons in whom the disease is never very protracted. I venture to affirm, that these supposed recoveries held but a trifling relation to the mode of treatment, the strength of constitution enabling the patients to withstand the debilitating influences of the remedy and the disease.

We therefore find that these objections do not in the least invalidate the conclusions which we have deduced regarding the asthenic character of rheumatic fever, and its intimate alliance with those diseases which depend on a depressed condition of the blood.

TREATMENT.

This may be considered under five heads: 1st, Antiphlogistic; 2d, Specific; 3d, Narcotic; 4th, Eliminative; 5th, Tonic or alterative.

In coming to a conclusion regarding the effects of remedies in shortening the duration of any disease, we have to ascertain, as the basis of our investigation, the natural duration of the malady. I have already pointed out that rheumatic fever has no fixed duration, but that it varies within certain limits—that is, from one to three weeks. The best observations which I have read on this subject will be found in an article by M. Dewalsche, on the expectant treatment of acute articular rheumatism in the Military hospital of Antwerp. He relates several cases of the disease, with the object of proving that this plan of treatment, introduced by M. Gouzée, the physician-in-chief to this establishment, is much more satisfactory in its results than the treatment by emetics, bleeding, opium, iodide of potassium, alkaline salts, &c. The plan of treatment adopted consisted of equable temperature, pure air, abundance of diluents, tepid baths, fomentations, good diet, bitter tonics, especially quinine.

The results of this treatment are—first, that the malady tends to terminate naturally in the *first or second week*; secondly, that the termination is brought about as safely, and as soon, as if active treatment had been employed; thirdly, that the *bruit de soufflé* of the heart, frequently heard in the course of the malady, disappears spontaneously, in the majority of cases, as the recovery progresses; fourthly, that these *bruits* are not always and certainly the signs of endocarditis.

The following cases admitted into the Glasgow Royal Infirmary confirm the above conclusions:—

Case I.—W. A., a labourer, admitted Dec. 4.—Complained of

pain of right wrist and both hip joints, the former swollen and red. On examination of heart, a loud bellows systolic murmur is heard over the apex, and between the third and fourth ribs; about one and a half inches from left margin of sternum, a clicking sound heard occasionally attending the second sound. Pulse 92. Illness commenced eight days ago with febrile symptoms, pain and swelling in the knee and ankle joints, flitting from the one to the other, but these parts are now free from pain. Has had no treatment. He was ordered *a dose of salts and senna*. Next day the pains were gone, but the murmur continued until the following morning, when it disappeared, independent of any treatment. He was dismissed quite free from complaint on the 9th, being only five days in the ward, during four of which he was free from complaint.

Case II.—Al. C., aged 17, admitted March 12.—About a week previously he was attacked with shivering, followed by acute pain in the knee joints, with swelling and redness. The pain is now considerably improved; some swelling remaining, but redness gone. Impulse of heart increased, and a soft systolic murmur heard over apex. Pulse 96; tongue furred; bowels constipated. *Two grains of calomel, ten grains of rhubarb, and two of ginger.*

15th.—Free from pain, and murmur gone. *Two grains of metallic iron three times a day.* Was dismissed well on the 22d; that is, on the eighteenth day from the commencement of illness, and the tenth after admission.

Case III.—J. M. H., aged 38 years, a labourer, admitted March 3.—He stated that a week previously he was seized with a shivering fit, followed by fever, and pains in the knee and elbow joints. The wrist joints are now principally affected; they are much swollen, red, and acutely painful. Heart sounds natural; but a cavernous rhoncus heard at apices of both lungs. Pulse 96. Has had no treatment. To take a table-spoonful every six hours of the following mixture:—*Potassio-tartrate of iron, two drachms; liquor. potassae, three drachms; infusion of quassia, twelve ounces.*

5th.—Pain disappeared; has no complaint but feebleness. *Four ounces of port wine daily.*

6th. The iron mixture was discontinued, and he was put on cod-liver oil. He remained in the ward until the 26th, the rheumatic affection exhibiting no symptom of return. Though he remained twenty-three days in the house, yet the rheumatic attack was only of *ten days' duration*.

Case IV.—J. P., aged 32, a sailor, admitted June 9.—He stated that, about a fortnight ago, on his passage from New Brunswick, he was attacked with severe pains in large joints, shifting from one joint to the other; at present, both knee joints and left elbow are affected. There is considerable swelling at these parts, but he affirms that the pain and swelling have abated very much

within the last few days. Heart sounds normal. Pulse 80; bowels confined. Has had no treatment. *A purgative injection.*

11th.—Is free from pain. He was then ordered the same mixture of iron and quassia as the last patient, and dismissed well on the 19th, being *ten days* in the hospital, and about *fifteen days* under the disease.

Case V.—A. M. F., aged 22 years, admitted Jan. 18.—Ten days ago was seized with shivering, followed by febrile symptoms, and pain and swelling in the knee joints, succeeded by a similar condition of the elbows and shoulders. The pains are now greatly better in all the joints, except right shoulder; a soft bellows systolic murmur heard at centre of sternum. Pulse 96. Two years ago had a severe attack of rheumatism of fifteen weeks' duration. She has had no treatment, except two doses of Dover's powder. *One grain calomel and five of Dover's powder night and morning.*

21st.—Pains gone. The medicine suspended on the 22d. She was then ordered two grains of sulphate of quinine three times a day. Dismissed well on the 5th February, being only fourteen days under the disease, and ten under treatment.

Four other patients were admitted, in which the disease had a duration of seven, ten, eleven, and fourteen days respectively, without any treatment having been adopted.

We are, therefore, justified in concluding, from the occurrence of such cases, and from the experience and observations of Dewalsche and Gouzée, that rheumatism often runs its course within a period of one or two weeks without any medicine. It is of vital importance to keep this in view, in estimating the value of any plan of treatment. The natural duration of the attack should be the standard by which we should judge of the efficacy of any method of treatment, and not by contrasting one plan with another. Indeed the latter mode is almost impossible, in consequence of the want of uniformity among writers on the subject. For example, some mention the time which elapses from the commencement till the subsidence of the pains; others extend the duration till the patient is able to be dismissed; and a third party limits the duration of the case to the period that the patient has been under treatment. Under such circumstances, we have great difficulty in forming an opinion as to the relative duration of the disease under different modes of treatment. Even though an extensive examination of the subject should show that the disease was quickly relieved under the use of certain remedies, yet we could only deduce from this, that the treatment seemed preferable, not that it really cured the disease in the manner alleged by its advocates.

I shall proceed to compare the duration of the disease under the different plans of treatment, with the natural period.

1st. *Antiphlogistic.*—The remarks which I have already made

on blood-letting, render it unnecessary to make much farther comment. I have already stated that the average duration of the cases under Bouillaud's repeated bleedings, "*coup sur coup*," was above four weeks; that is, not from the commencement of the disease, but of the treatment till the subsidence of the pain. This author acknowledges that inflammation of the heart was the rule and not the exception under this treatment: "*Coincidence a peu pres constante soit d'une endocardite soit d'une pericardite, soit d'une endo-pericardite.*"

Dr. Macleod in this country has been the ablest advocate of the same heroic bleeding; he tells us that he was in the habit of taking "twelve to twenty ounces of blood, several successive times, in the course of five or six days, from persons of average robustness." Let us examine the result. He tells us "that 58 out of 82 cases were discharged cured within a month." It must be recollected, however, that this refers to the time the patients were under treatment: we are not informed how long the disease existed previous to admission. With regard to cardiac complications, he states that, "of the 85 cases of acute rheumatism above alluded to, the heart was implicated in 18, or rather more than one-fifth." I have already alluded to the experience of Monneret on blood-letting.

We are justified to infer from these facts, that blood-letting does not shorten the duration of rheumatism, but, on the contrary, nearly doubles the natural period. This is indeed confirmed by a host of the most talented of the profession, from the illustrious Sydenham downwards: "*Non tantum ægri vires pro tempore franguntur, sed si paulo fuerit natura debilior, aliis etiam morbis ad annos aliquot obnoxior fere redditur.*" Dr. Heberden, in his Commentaries, states that, "as far as I have been able to judge, the benefit of large bleedings in most cases is far from clear and unquestionable." Dr. Willan affirms, "the pains, swellings, and fever are not only aggravated at the time, but often protracted indefinitely." Fordyce, Alison, Hawkins, Seymour, Todd, Fuller, Watson, Latham, have expressed similar opinions. I hold that the same remarks will apply to Dr. Hope's plan of calomel at night, and black draught next morning, and to all manner of antiphlogistic remedies; they only differ from bleeding in the degree of their mischievous tendency.

2d. Specifics.—Under this head may be placed colchicum, guaiacum, iodide of potassium, and nitrate of potash. The records of medicine show that we have neither uniformity in the effects of these remedies, nor the slightest evidence that they exert any influence in shortening the duration of the disease.

The perusal of cases so treated will show that the duration of the disease generally exceeded one month, often several.* These

* Vide Dr. E. Monneret, *Archiv. Gener. de Med.* Mar., 1844.

remedies, however, are very useful in certain cases, colchicum especially, when the urine contains small quantities of the urates, and when the patient is of a full plethoric habit; but it is very prejudicial when the constitution is weak, or the patient young or very old. Gussienum is also useful in old chronic cases, attended with a deficient cutaneous secretion; it is very injurious, however, in acute cases. Iodide of potassium I have found very beneficial when the effusion had taken place into the synovial membrane, or when the membrane happens to become inflamed, constituting what some writers designate synovial rheumatism; but, from what I have witnessed, the drug is not only useless but hurtful in ordinary acute rheumatism.

3d. Narcotic.—Dr. Cazenave in France, and Dr. Corrigan in this country, have treated the disease by large and repeated doses of opium; the average quantity which the latter orders is about twelve grains every day. In one case he gave two hundred grains during the course of two weeks.

Under this treatment the duration of the attack, in some instances, has been limited to nine or ten days. I have most faithfully tried this plan, but with a much less favourable result. I have witnessed the same want of success in the practice of other physicians. Opiates are highly advantageous in the disease—they mitigate the intensity of the pain. I generally use them in some form or other. I prefer the laudanum injection, because the drug in this way interferes least with digestion and secretion.

4th. Eliminate.—This is the most fashionable treatment of the present day. Those who advocate this practice, found it on the speculative opinions which have been reviewed at some length in this paper—namely, that the disease results from certain abnormal chemical changes taking place during the processes of assimilation. Remedies have therefore been selected, the chemical constitution of which render them capable of entering into combination with the effete matters, and of reducing them into a proper condition for elimination through the excreting organs, especially the kidneys and skin. The most popular of these remedies are lemon juice and the alkaline salts. The speculative theories of the *modus operandi* of these medicines are very plausible and captivating;—when supported by the vaunted rapidity of the cure of the disease, they become almost irresistible. The able originators of these doctrines, and the mobile part of the profession which follow in their train, applaud themselves as the only scientific practitioners; all others they deem behind the age—mere ignorant empirics. From the remarks which I have ventured to make on the fanciful notions of these chemico-pathologists, the reader will perceive that I will enjoy the unenviable position of being considered among the superannuated individuals. I have the presumption to think, however, that I

can prove satisfactorily—1st, that eliminatives do not shorten the duration of the disease; 2d, that they often prove injurious; and, 3d, that the practice is unscientific.

1st. I contend that the eliminative treatment has neither proved more uniformly efficacious, nor more speedy than other modes.

(a.) *Lemon Juice*.—Dr. O. Rees, who introduced this remedy, supposes that, by the excess of oxygen it contains, it promotes the conversion of *lithic* (?) acid into urea and carbonic acid, and consequently favours its excretion from the system, while the alkaline citrate which it contains assists to promote a cure. A careful examination of the cases related by Dr. Rees shows, that on the average his cases were *twenty-five days* under treatment, and were *forty days* under the disease. I have examined the result of the treatment in twenty-seven cases reported by other advocates of this remedy, and I find that *twenty-eight days* is the average duration of the treatment, and many of the patients had laboured under the disease at least a week previous to admission. Need I point out the inferiority of the treatment, thus proved by the above results in the hands of its advocates, in comparison to the expectant method? Such is the rage for novelty, that though these facts were patent to all, yet the great mass of the profession commenced to dose their patients with the remedy; and though, at the present moment, it has been discarded by intelligent and leading physicians as at least uncertain in its action, yet many still continue to exhibit it, and consider their practice as the *ne plus ultra* of medical science.

(b.) *Alkaline Salts*.—Dr. Fuller has used these largely, and states that it is impossible to speak too highly of their efficacy. On a careful examination of the six cases reported in his excellent work on Rheumatism, it will be found that these patients were on an average *twenty-one days* under the disease, and sixteen days under treatment.

Dr. Garrod has recently recommended large and frequent doses of bicarbonate of potash. He states that the result of his experience has been, that, in twenty males, the duration of the disease under treatment was between six and seven days, and the total duration between eleven and twelve days; and in thirty-one females, the disease under treatment averaged from seven to eight days, and the total duration between fifteen and sixteen days. He details three cases: The first, a girl aged ten years; the patient was under treatment five days, and under the disease eight. The second, a young man aged twenty years, under treatment eight days; total duration fifteen days. The third, a young woman aged eighteen years, total duration thirteen days, under treatment only nine days; this was her fifth attack, the former ones always lasted for a month or five weeks.* On contrasting the results of

* Association Journal, March 16, 1855, p. 263.

the treatment in these cases with those placed under the expectant plan, we do not perceive any advantage on the side of the alkaline. There is one favourable claim to which it is entitled, that it does not seem to *protract* the disease to any great extent. The last case quoted by Dr. Garrod appears, from the comparative shortness of the attack, to favour very strongly his views. I beg to notice the following instances from the journals of the Infirmary as a very good contrast:—

Case VI.—J. M., aged 16 years, admitted Oct. 12.—Eight days ago, after exposure to cold, fatigue, and wet, he was attacked with shivering, followed by pains and swelling in knee and ankle joints, and subsequently shifting to elbows and wrists. Pains have now almost left all the joints, except left elbow and wrist, which are still swollen and red. Pulse 100. Has had no treatment. *Fomentations to wrist.* Next day, pain almost gone, and swelling much subsided.

14th.—Has no complaint but weakness. *Five grains of potassio tartrate of iron, and an ounce of decoction of cinchona bark, three times a day.* This boy, though he had no treatment, yet was only ten days labouring under the disease.

Case VII.—A. M., aged 40 years, admitted Sept. 28.—She complained of pain in left wrist, and right knee and ankle joints. They were swollen, especially the wrist. Tongue furred; pulse 120. A soft systolic bellows murmur heard over left margin of sternum, between the fourth and fifth costal cartilages. More than usual extent of dulness over cardiac region. About a week since, felt unwell; lost appetite; but three days ago, after exposure to cold, was seized with a shivering fit, followed by pain and swelling of joints. She had no treatment. Six years ago she had a most severe attack of rheumatism of many weeks' duration, and attended with heart affection. *To have hot fomentations to joints.* Three days after admission, she was free from pain; some stiffness of joints remained. She was ordered to take a table-spoonful, three times a day, of the following mixture:—*Potassio-tartrate of iron two drachms, infusion of quassia twelve ounces.* On the 3d of October she was able to be up, and continued to keep free from any return of the disease until the 27th, when dismissed. This patient was, therefore, only six days labouring under the disease. I kept her fully three weeks in the ward, to ascertain if any relapse would take place. Now, had bicarbonate of potash been exhibited in either of these two cases, doubtless we might have ascribed the cure to the agency of the drug. These two, and the other instances already quoted, authorize the suspicion that the recoveries under the alkaline treatment are due more to the physiological powers of the system than to the therapeutic influence of the salt. At all events, it is obvious that the disease is often removed as rapidly without as with its aid. Finding, then, that the attack abates within as short a period when no

treatment has been adopted, as when the patient is drenched with alkaline solutions, are we not justified in considering that the remedies hold no relation to the cure? If there exists in the blood morbid matter, and if the alkalis be capable either of neutralizing or eliminating such matters, we would expect that they would be uniform in their results; but we find, even among the cases quoted by Drs. Fuller and Garrod, instead of uniformity, there appears very great dissimilarity in the duration of the attacks. We are therefore forced to conclude, that the influence of the remedies has been merely of a negative character.

The disciples of the chemical school of pathology have not been content to use alkaline eliminatives internally, but to employ them as fomentations to the joints, under the idea that they become absorbed through the skin, and in this way decompose the lactic acid. A more fanciful notion could not well be conceived. Let us reflect on the state of the swollen joint. Certainly the skin is not in a condition to permit absorption. Again, the local manifestation does not constitute the disease. Is it not, therefore, absurd to apply an alkaline solution locally? To be of any use, it must first gain access to the general circulation. I admit that much comfort is secured to the patients by these fomentations, but I deny that this is effected by the alkaline substances. I have witnessed the same relief follow the use of unmedicated hot water. I have often applied to one joint the alkaline solution, and to another hot water, and the result has been equal. It is the water, and not the salt, that proves beneficial. Strange to say, that medical men of great scientific pretensions proclaim the use of these alkaline fomentations as the teachings of the soundest philosophy. O ye shades of Martius Scriblerius—the mighty Panurge! and professors of Signatures! why do ye not start from your graves, and applaud your worthy confreres of the nineteenth century!

2d. Let us next inquire if this eliminative treatment be not injurious? It is admitted by all who have expressed their opinions on the subject, that neither lemon-juice nor alkalis are suitable to patients of weak habits, a class which constitutes at least three-fourths of those attacked. Again, we have found that the average duration of the disease, under either of these eliminatives, is much beyond the natural period. It is not difficult to understand how this must occur. It may be affirmed, that by depressing the system we must, in all cases, retard the course of rheumatism. By increasing secretions, by interfering, as large doses of alkalis must do, with the processes of nutrition, the powers of the system will be exhausted, and we have seen that the natural tendency of the disease itself is to depress the vital powers. We can have, therefore, little hesitation in affirming that the eliminative plan of treatment is not only useless, but positively injurious.

3d. The practice is unscientific. Who would think of treating typhus, variola, rubeola, or scarlatina, by eliminatives? The treatment of rheumatic fever by this class of remedies is equally improper. It is founded on most erroneous notions of the pathology of the disease. Before we can possibly remove the morbid condition of the blood by eliminatives, we would require to withdraw the last ounce of the vital fluid. What is the well-ascertained effect of blood-letting, one of the most powerful eliminatives we have? Is it not to increase the very abnormal condition peculiar to rheumatism? Every other remedy of the same class must have more or less the same result. Consequently, the protraction of the disease must necessarily be the tendency of such treatment.

In conclusion, therefore, we observe that the eliminative method is founded on erroneous notions, is unscientific, and incapable either of shortening the duration of the attack, or mitigating the sufferings of the patients. I wish it to be understood, that by the term Eliminatives, I mean remedies that stimulate the secretions, by passing out of the blood through the secreting organs, and in their transit exciting them to the performance of their functions. In this sense they become evacuants. Alkaline salts or any other drug given to such an extent, must necessarily increase the morbid condition of the blood that characterizes rheumatic fever. These very substances, on the other hand, when given in moderate doses, so as to improve digestion—or, in other words, to act as hæmatics—prove often highly useful in the disease, either as restoratives or vital antidotes, but not as eliminatives.

Tonic Treatment.—We have seen that rheumatic fever is intimately associated with those diseases depending on an altered condition of the blood; and we have also seen, that so far as chemistry can demonstrate, the altered condition peculiar to rheumatism consists in an increase of the fibrine, and a deficiency of the hæmatosin. Hæmatics are, therefore, the most appropriate remedies. By their influence we may reasonably expect to remove the faulty state of the blood.

I need scarcely remark that hæmatics are divided into two classes, one class containing substances natural to the blood;—they form a part of its constitution. They may therefore remain in it, and never be excreted. These remedies are useful when the blood is deficient in one or more of its constituents. They are therefore called restoratives. Now, in rheumatism we know that there is a diminution of the red globules. We also know that iron is the proper hæmatic to *restore* this deficiency.

"The other class," as Dr. Headland remarks, "are not natural constituents of the vital fluid, and cannot remain there. . . . They are of use when disease depends on the presence and working in the blood of some morbid material or agency, which

material or action they tend to counteract or destroy." Now, in rheumatism we find the blood loaded with fibrine. Experience has taught us that the best vital antidotes which we have to remove this state of hyperinosis, are tonics and alkalies. These are vital catalytics, breaking up the fibrine, and, after performing this function, often pass out of the body unchanged. Again, it seems highly probable, from the researches of Dr. Boecker, that many of our tonics act in preventing those destructive changes which take place in the blood. He has shown that the effete products of the system diminish under the use of wine, sugar, and coffee. Simon properly remarks, "that our hopes of dealing successfully with humoral disorders depend altogether on the event of such investigations—investigations which never can be profitable, unless, like Dr. Boecker's, they include an account of every individual excretion, and base themselves on a profound study of the natural metamorphoses of the blood."

The recent researches of M. Liebig have shown, that there is a strong resemblance between the taurine of the bile and quinine. Dr. Headland suggests that quinine, and other bitter tonics, may act beneficially in taking the place of taurine. Now we know that the biliary secretion either is deficient or deranged, not only in rheumatism, but also in fevers of all types. It is a matter of general observation, that quinine is often most beneficial in these affections. Dr. Headland has made some important remarks on this subject. I beg to refer my readers to the work itself. I would observe that I have often found tonics the best remedies for improving impaired or depraved secretions. These states frequently depend on vitiated conditions of the blood, resulting from improper primary assimilation. If we improve the digestive powers, we improve the blood, and, consequently, supply the most necessary of all conditions for healthy secretions.

We often err very much in ascribing the disease of the blood to the impaired secretion or excretion, whilst, in fact, such impairment arises from the state of the blood—is the effect, not the cause. Often are the liver and kidneys most unjustly blamed, and most unmercifully treated, when they are not only perfectly innocent, but actually labouring as hard as possible to form their accustomed secretions from blood altered in its constitution.

In rheumatism we have an abnormal quantity of fibrine in the blood, and we need not be astonished to find the urine altered considerably in its constituents, especially those containing nitrogen. I need not digress on this subject any further, its importance to practical medicine being most obvious.

The benefit which followed the use of quinine, iron, wine, and other tonics, in the rheumatic complication of the fever of 1843, led me to reflect on the treatment of rheumatism by

bark, as recommended by Dr. Haggenth and others. (The average duration of the causes so treated seems to have been about two weeks.) These circumstances, along with the asthenic condition of the system which exists in rheumatism, and the resemblance which its phenomena hold to those of other fevers and blood diseases, induced me to treat the disease by tonics and alteratives, selecting the remedies from those classes that seemed most suitable to the peculiarities of each case. It is just the same in rheumatic as in other fevers, that whilst the general principles of treatment are the same, the details must vary in each case. As our object in fever is to guide the patient safely through the attack, and preserve his strength as much as possible, so in rheumatism our object should be similar, not to flatter ourselves that we will be able to cut short the attack, but to endeavour to prevent organic lesions taking place, and support the patient's strength, in order to avoid the production of that morbid tendency to a return of the disease—usually designated by the term *diathesis*—the proper definition of which is *ignorance*.

I have no nostrum to propose—I have no favourite tonic to recommend—I am perfectly eclectic, being guided by the specialities of the case. I generally order some preparation of iron, combined with moderate quantities of liquor potassæ. When the liver is much deranged, I give a dose of calomel and rhubarb. When the urinary secretion is scanty, and its specific gravity not much increased, I prescribe colchicum. I frequently order quinine, either alone or combined with iron. Quassia suits remarkably well, and it has cheapness as a recommendation; when combined with the alkali, it quickly improves the digestive organs. WINE I deem the best and most efficacious tonic in weakly habits, or in those exposed to much privation. I never hesitate to give it freely to such patients even when the joints are acutely affected. Fomentation is the only local application which I employ. An opiate at bedtime is strongly demanded; I generally order it in the form of laudanum enema.

The results of this simple plan of treatment have been most satisfactory. 1st. In no case has the patient been under treatment beyond a fortnight. In the majority the pains have been mitigated, if not subdued, in a much shorter period. 2nd. The period of convalescence is much shortened; the patients are much sooner able to resume their occupation, and seldom present the anæmic exhausted appearance exhibited by those who are submitted to more active plans of treatment. 3rd. The liability to cardiac disease is much less. In none of the cases admitted to the Infirmary did this complication occur when the patient had been put under the treatment on admission. Indeed, I am convinced that cardiac disease will be of very rare occurrence, if

the tonic or hæmatic plan of treatment be adopted at an early period of the attack.

The length to which this paper has extended prevents the further narration of cases illustrative of the effects of treatment founded on the foregoing principles. I shall, however, refer to this part of the subject on another opportunity. I may state, in the meantime, that during the year, twenty-one cases of the acute form of the disease were admitted, the average duration of which was thirteen days, that is, from the commencement of the pains till their complete subsidence, and perfect ability of the patients to leave their beds.

The average duration of the disease before admission being six days,—under treatment seven days. Average residence in the Infirmary nineteen days. It has been my rule to keep the patients at least one week in the ward after complete recovery, with the view of preventing either a relapse, or the development of the peculiar morbid diathesis. The greater number of the patients belonged to that class of society in which want and privation abound. The majority were compelled, as soon as dismissed, to resume occupations which exposed them to the exciting causes of the disease. To dismiss such patients until they are safe from the risk of relapse, I hold to be a very improper proceeding.

IV. *An Unusual Case of Popliteal Aneurism.* By JOHN D. MUTER, Esq., Fellow of the Faculty of Physicians and Surgeons, Glasgow.

Aneurism occurring in both legs—Spontaneous cure in left—Ligature of Artery in right, after failure of compression—Cure.—June 1st, 1853.—Mr. —, aged 37, a tall, athletic, healthy-looking man, applied to me on account of a small tumor which he had noticed a few weeks previously in the popliteal space of the left leg. The tumor had appeared soon after he had run a long distance for a wager. It was about the size of an ordinary walnut, and pulsated strongly. The leg was slightly cedematous. On compressing the femoral artery at the groin, the pulsation in the tumor instantly ceased; it became flaccid, and could be handled without pain; but on removal of the pressure, it instantly sprang up, pulsated vigorously, and was excessively painful. On applying the ear or stethoscope over the tumor, a loud blowing sound was heard to accompany each pulsation. I explained to the patient the nature of his disease, and wished him to confine himself to bed, and make trial of pressure. Without my knowledge, however, he went to the country, and travelled a long distance to consult a "bone-doctor," by whom the limb was

submitted to a good deal of manipulation. Soon after this the leg became cold, numb, and weak, so that the patient was alarmed, returned to town, and applied to me once more.

On examination I found that the pulsation had *decreased* greatly, that the tumor felt much firmer than formerly, and at the same time the pulsation in the posterior tibial artery at the ankle was barely perceptible, showing that there was an obstruction to the stream of blood, preventing it from passing freely in its direct channel. The patient was advised to remain in bed, and the limb was enveloped in flannel. In the course of a few days more the tumor had entirely *ceased to pulsate*; it had become quite solid, and was without any pain, whilst about the knee several vessels could be felt pulsating strongly, and evidently larger than in the normal state. In the course of six months the tumor had entirely disappeared, but the leg continued for a long time thinner and weaker than the right leg.

In this case, then, the aneurism, which undoubtedly existed, underwent a spontaneous cure. There are many such cases on record, although, in proportion to the number of aneurisms, such a fortunate termination is rare. Among the last published cases I have noticed, is one by Professor Syme of Edinburgh, which resembles the one now related. "The patient had come nearly 200 miles, and was kept quiet in bed with restricted diet, and gentle aperients to prepare him for the operation. In the course of a day or two from the time of his admission (18th November), the aneurismal pulsation became much less, and could not be felt at all on the 23rd, when the tumor was observed to be greatly reduced in size, and no longer the source of any uneasiness."* The probability is, that in such instances nature effects a cure in the manner described by Hodgson as the most usual. "The blood which enters the sac soon after its formation," remarks that author, "generally leaves upon its internal surface a stratum of coagulum, and successive depositions of the fibrinous part of the blood diminish the cavity of the tumor. At length the sac becomes entirely filled with this substance, and the deposition generally continues in the artery which supplies the disease, forming a firm plug of coagulum, which extends on both sides of the sac to the next important ramifications that are given off from the artery. The circulation through the vessel is thus prevented, the blood is conveyed by natural channels, and another process is then instituted, whereby the bulk of the tumor is removed, and the surrounding parts are enabled to resume their natural functions."†

In the commencement of October, 1854, the same person presented himself to me with a tumor in the popliteal space of the *right* leg, as large as an orange, and having, in a very marked degree,

* Edinburgh Medical Journal, January, 1851.

† Hodgson on the Arteries, 1815.

all the characteristic signs of an aneurism. This tumor had been noticed by the patient about three months previously. It had increased rapidly, and the thinness of its summit showed that the danger of bursting was imminent. The patient attributed this tumor, as well as the former one, to his running exploit. There was no sign of disease in the heart or large vessels, and his appearance was not that of one who had led an intemperate life. On account of the peculiarity of this case, I called in consultation Drs. Andrew Buchanan and Lawrie, both of whom, after a very careful examination, confirmed the accuracy of the diagnosis in the former as well as in the present case, and advised a careful trial of pressure. Accordingly, the treatment was commenced with Cartes' circular compressor on the 13th October. I had two screws instead of one fixed to the same sole-plate, a little apart from each other. The pads were placed over the artery below the origin of the profunda. One pad was then screwed down so as to arrest the pulsation in the tumor, and when pain was produced the second pad was screwed down before the first was relaxed. In this way, and by shifting the apparatus a little higher or lower, very effectual pressure was kept up. The patient soon became dexterous in the management of the instrument. At first the pressure could be endured for four or five hours only, but after a few days it could be borne for ten or twelve hours. Notwithstanding, however, the determined and intelligent perseverance of the patient for nearly two months, no perceptible change took place in the tumor. I now kept up the pressure for twenty-six hours continuously, and with my own hands, being exceedingly anxious to effect coagulation by this means; but on removing the instrument at the end of the time mentioned, the pulsation returned as before. The patient now complained most bitterly of the pain, restraint and annoyance of the pressure, and earnestly begged to have the operation performed. I gladly consented, being sorry for the pain, &c., to which he had been so long subjected. After waiting till the parts which had been injured by the pressure had sufficiently recovered, the superficial femoral was ligatured in the usual way on the 17th December. No untoward symptom followed: the ligature came away on the twenty-first day after the operation, and the patient was soon able to attend to his usual occupation.

This was a very satisfactory termination of a case wherein pressure had been so long and so vigorously tried, for it is well known that the operation, *after* the pressure, has been followed in several instances by the most serious results.

V. *Report of Obstetric Cases occurring in Hospital Practice.*

By J. G. WILSON, M.D., Fellow of the Faculty of Physicians and Surgeons, Glasgow.

1. *Case of Intercepted Labour, from a Syphilitic Cicatrix, involving and in great part obliterating the Os Uteri.*

June 14, 1854.—Called to see Mrs. —, aged 28, in labour of her second child. I learned from the student in attendance that her pains were perfectly regular and uncommonly severe; that he had failed, after repeated trials, to discover any trace of the os uteri, and that there was an unusual degree of induration and rigidity in the lower segment of the uterus. On careful examination *per vaginam*, nearly the whole of the uterus within reach of the finger seemed involved in an extensive and irregular cicatrix, of a hard and unyielding character. It had generally a granular, puckered-up, and almost cartilaginous feel; only a small portion posteriorly seemed free from disease, in which situation a small irregular depression or concavity was felt, through which the finger could not be passed more than a quarter of an inch in an upward and forward direction. This was the only thing at all resembling the os uteri that could be detected. As the pains were of a very intense character, an opiate was administered with a view to moderate or suspend the action of the uterus. On the following day the pains were still severe, being of a very violent and bearing-down description. The opiate had only afforded slight temporary relief. On examination, the foetal head was found bearing down against and distending the lower part of the uterus. The depression already mentioned seemed a little larger, but still irregular and very rigid. It resembled more the partially dilated os uteri, with its lips inverted and firmly agglutinated, and could only be felt during the interval of the pains. Fearing lest the violence of the uterine contraction would either exhaust the patient, or induce rupture or some laceration of the uterus, or destroy the child, I requested the late Dr. Stewart to see the patient, which he did, and found the state of matters to be as just described. He was averse to incision or other operative interference, believing that the natural efforts would, ere long, overcome the resistance offered, and recommended an opiate to be again administered, followed, if necessary, by small and repeated doses of antimony, and the injection of tepid water *per vaginam*. An opiate was accordingly prescribed, and on visiting her the next day (16th) I found that it had only afforded transient relief as before. Her friends strongly objected to the inhalation of chloroform. She stated that, some hours before, she experienced a tearing sensation, as if something had given way, and which she referred to the lower part of the abdomen. This was followed by a gush of the liquor amnii, tinged with blood.

On examination, the water, still dribbling away, was found to proceed from a ragged aperture, about an inch in length, in the situation of the already noticed depression. The pains had now become, if possible, more intense, so that it required three persons to hold her down in bed; and the child, a large living male, was forcibly expelled in one pain a short time afterwards. The child died a few days subsequently, and presented several indications of a syphilitic taint. Mother made a favourable recovery. A period of nine years had elapsed since this woman gave birth to her last child, and in the interval she was for a considerable period a patient in the Lock Hospital.

2. *Case of Arrested Delivery from a large Ascitic Effusion in the Fœtal Abdomen.*

August 7, 1855.—Mrs. S., aged 30, has been in active labour for fourteen hours, and attended by one of the students. The feet were in the vagina when I saw the patient, and had been in this position for several hours without advancing in the least. On examination as to the cause of the delay, it was soon ascertained that the abdomen of the child was for the most part within the uterus, and enormously distended. Gentle and well-regulated traction by the feet was tried for some time, and failed in bringing down the body. A stronger degree of extractile force was now had recourse to, and the limbs were nearly torn off before the breech could be brought into view. A considerable quantity of sero-sanguineous fluid now escaped from a slight rupture at the umbilicus, caused by the surrounding pressure; the walls of the abdomen began shortly after to collapse in some degree, and the transit of the child was now soon accomplished. No difficulty was experienced in the delivery of the head. The child, which was at the eighth month, was dead, and must have been so for some time, as there was considerable desquamation of the cuticle covering the chest and arms. After the birth of the child there was still a very large accumulation of fluid within the abdomen, but the quantity that had escaped from the umbilicus—being the weakest and least resisting part of the abdominal parietes—materially influenced the subsequent delivery. Had it been known that the child was dead, the introduction of a trocar into the abdomen at an earlier period might have curtailed the woman's suffering, and obviated all difficulty. The mother stated that all her previous children had been still-born at the eighth month, and each presented with the feet. The motions of the child in each instance ceased a few days before the onset of labour. The abdomen of the last child was considerably enlarged, but not to the same extent as the present. The placenta was much diseased—presenting all the appearance of the so-called fatty degeneration. I requested this patient, in the event of her

again becoming pregnant, to give timely information, with a view to the artificial induction of premature delivery.

3. *Case of Abdominal Presentation with Prolapse of the Cord.*

Feb. 7, 1854.—Mrs. C., aged 30, mother of several children, all of which were born naturally and at the full period, states that she has just entered her eighth month of pregnancy. A few hours previously, when over-exerting herself in the discharge of some household duty, was unexpectedly seized with all the premonitory symptoms of labour. The rupture of the membranes was followed by the descent of a large loop of the cord, which was the cause of great alarm. On examination, about a foot of the cord was found prolapsed and pulsating strongly. Os uteri thin and rigid, and dilated to about the size of a shilling. From feeling the foetal insertion of the cord just over the os uteri, it was easily ascertained that the abdomen was the presenting part. After waiting a few hours, in the hope that nature would still further relax and dilate the uterine orifice, it was found that the pulsations in the cord were gradually becoming fainter and more irregular, notwithstanding every attempt to protect it from pressure. It was now evident that the child's safety depended upon immediate delivery, and it was resolved, without further delay, to have recourse to artificial dilatation of the os uteri, and delivery by the feet. An opiate having been administered, the os, in the course of an hour, was so far dilated by the fingers in the usual way, as to admit the introduction of the hand into the uterus. The left knee was seized, and the foot brought into the vagina. In the transit of the infant, the os uteri contracted firmly around the breech, shoulders, and neck, as they successively descended, and from the pressure and delay which was thus occasioned the child's life was placed in imminent danger. The infant when born was in a state of irrecoverable asphyxia. Mother made an excellent recovery, with the exception of a slight attack of intercurrent pneumonia. I should have mentioned that Dr. Alexander Macdowall assisted in the delivery of this patient.

4. *Case of Complete Placental Presentation, in which the Placenta was Extracted before the Child.*

On the 8th October, 1854, one of the students requested me to visit a patient residing in Calton, who was reported to be dying from excessive hæmorrhage. The particulars of the case are as follow:—Patient is 20 years of age, and in labour of her first child, and at the full time. Has always enjoyed robust health. For the last four days she has had, contemporaneously with the labour pains, several severe attacks of uterine hæmorrhage—the blood is described as coming away in a slow but

nearly continuous drain, alternating with occasional gushes. Her only attendant during this time was a midwife; and the treatment consisted in the use of stimulants, astringents, application of cold water, and rest in the horizontal position. The plug was not introduced into the vagina. No attempt had been made to diagnose or ascertain the nature of the presentation, till she was seen by the student a few hours before my arrival. I found the patient in a state of great anæmic depression: countenance pale and ghastly; skin cold, and bedewed with a clammy sweat; pulse hardly perceptible. The mattress and bedclothes were saturated with blood. On first examination, found the vagina occupied by several large and apparently recently-formed coagula, which completely obscured the os uteri. Suspecting placenta prævia, partial or complete, I did not choose to remove or disturb those clots and ascertain the presentation, till quite prepared to act as the nature of the case might require. The patient was rapidly sinking, and the least additional hæmorrhage would, in all probability, carry her off. Having administered a stimulant, the coagula were cautiously removed, the os uteri was found dilated to the size of a shilling, and the placenta found implanted over the entire circumference of the os, a small portion only being detached posteriorly, from which the hæmorrhage proceeded. Artificial dilatation of the os to the requisite extent was easily effected, and the placenta was then detached and extracted. An arm having presented, the child was turned and delivered by the feet. The infant, a full grown female, was in a very exanguine state. The mother never rallied, notwithstanding the use of stimulants, &c., and died in little more than an hour. Little or no hæmorrhage followed the separation of the placenta, which, in my opinion, is to be ascribed in this case more to the exanguine condition and depressed circulation of the patient, than to the causes assigned by Dr. Simpson in similar instances. This was one of those cases where it is difficult to decide what course of treatment to pursue. The woman had for several days been neglected, and was now in a state of imminent danger, and it was evident that there was no time to lose—that whatever was to be done, must be done immediately or not at all. It was all but certain that the woman would, if let alone, die undelivered; and it was also equally certain that operative interference would only hasten death. In most systematic works on Midwifery, we are recommended, in such urgent cases, to have recourse to galvanism or transfusion. The misfortune in practice, however, is, that the necessary apparatus for either method is generally not at hand in those very cases where most required. The patient's friends, under these circumstances, were extremely anxious that delivery should be effected whatever else should happen. Had the patient been seen earlier, the result might have been more fortunate.

VI. *By-gone Cases in Surgery.* By A. DUNLOP ANDERSON, M.D.,
F.R.C.S. of England.

(Continued from page 285.)

Case III.—Fracture of Acetabulum and Dislocation of Femur.—

Michael Gordon, labourer, aged 27, was admitted into the Royal Infirmary, Sept. 22, 1824.—At 5 p.m., whilst working in a trench at the foundation of a brick wall, an alarm was given that the wall was giving way. In his endeavours to escape, he put his right knee on the bank, and the bricks and rubbish fell upon his back. There was much tense and painful swelling in the right buttock. The right leg was shortened about an inch, half bent, and the toe turned a little outwards. The limb could be moved without much difficulty, but every motion gave pain. When rotated, distinct crepitus was felt by the hand placed over the trochanter major, which seemed to revolve on a shorter radius than usual. He complained also of pain in the right groin and lower part of the abdomen, and there was a small wound in the integuments at the root of the penis. There was no appearance of other injury. The pulse was small, and the skin cold. On fixing the pelvis, and making extension, the limb could be brought to the same length with the opposite, and the deformity at the hip in a great measure disappeared; but the least relaxation immediately reproduced the retraction and the rounded form of the hip.

Such were the characters of this case, and on observing them I had no doubt that they depended on a fracture of the femur at its neck. The apparatus of Hagedorn, which acts on the principle of making the sound limb a splint for the fractured one, was applied, and complete extension seemed to be readily thus effected. As usual, however, in most cases of this kind, and under almost every mode of treatment, the pelvis gradually got twisted, and the retraction again became evident. As the patient was sinking from internal injury, I considered it improper to use any other method of extension. He died four days after admission.

Sufficient cause of death was discovered in extensive fractures and separation at both sacro-iliac junctions, and at the symphysis pubis. At the hip-joint a fracture certainly was found. It was not in the neck of the femur, however, but in the posterior margin of the acetabulum, a portion of which, measuring nearly two inches in length by one in breadth, was detached and carried upwards on the dorsum ilii by the head of the femur, which was dislocated in this direction. The fracture also extended across the cavity of the acetabulum, but the parts remained *in situ*.

We have many instances on record of fractures of the pelvis extending into the acetabulum, but in these the head of the femur either remains *in situ*, or is lodged in the cavity of the pelvis, by

passing into the fractured part. In this case the position of the limb had been such, that the whole weight applied to the back bore directly upon the upper edge of the acetabulum; and if this had not yielded, a fracture of the neck of the femur must have taken place; for the dislocation was the result of the fracture, only because of the want of sufficient resistance to the head of the bone at that part of the joint.

Sir Astley Cooper, in his work on Fractures, has given a case somewhat resembling this. In his case, however, unlike this, the knee and foot were turned *inwards*, as in common dislocation on the dorsum ilii; and although, from this and other symptoms, a dislocation was suspected, yet crepitus being felt, this idea seemed to be relinquished, and nothing was done. After death, the posterior part of the acetabulum was found broken off, and the head of the femur had slipped from its socket. The other injury to the pelvis was fully as extensive as in our patient Gordon.

In the third volume of the Dublin Hospital Reports, Dr. Scott has also narrated a case which occurred to him in the Armagh Infirmary. In his case, however, the symptoms were those only of dislocation on the dorsum ilii. The dislocation was reduced, and it was after death, from other injury, that he found the brim of the acetabulum fractured at its upper part to the extent of about an inch. The fractured portion lay loose, and nearly unconnected.

The diagnosis between such a case as that of our patient Gordon, and fracture of the neck of the femur, must necessarily be difficult. In both cases the limb is shortened, and this shortening can be made to disappear by easy extension; in both there is crepitus felt on applying the hand to the trochanter, and producing rotation; and lastly, in both the toes are turned outwards, which is not the case in dislocation upwards without fracture. The chief points of difference seem to be in the degree of this eversion of the toes, which was but slight in our case, compared to what it generally is in fracture of the neck of the femur; and the crepitus in this case was felt by rotation without previous extension, whereas, in fracture of the neck of the femur, it is generally necessary to make some extension of the limb before the crepitus is felt.

In the preface to Sir Astley Cooper's work, he has stated a case where there was *inversion* of the toes in fracture of the neck of the femur, and I have seen the same circumstance, so that *eversion* cannot uniformly be depended on as a diagnostic. Neither does it seem clear why the toes in this case were not turned inwards as usual, for the fracture and detachment of the edge of the acetabulum ought not to have altered the position of the head of the femur after it was forced upon the dorsum ilii, nor changed the usual characters of that species of dislocation. Could the eversion have arisen from the dislocated head of the

femur not resting, as usual, on the dorsum ilii, but on the detached portion of acetabulum that had been driven before it?

Case IV.—Strangulated Scrotal Hernia—Operation.—George Armstrong, weaver, aged 30, was admitted into the Royal Infirmary, August 31, 1824, at 9 a.m. A reducible inguinal hernia had existed on the right side since infancy, which he had kept up by the constant use of a truss during the day. On the 29th inst., about 2 p.m., whilst at stool after a dose of salts, and without his bandage, the hernia descended, and increased to a greater extent than it had ever acquired before. It was larger than a man's two fists, of a globular form, with a thick neck, extending up to the ring. Air was heard gurgling in it when handled, and the integuments of the scrotum were livid, and felt thickened and oedematous. He complained of little pain, either in the tumour or the abdomen, even on pressure. He had had no stool since the descent of the gut. Some vomiting and hiccup since admission. Pulse 84. Tongue white. Skin of natural temperature. Increased thirst. Ineffectual attempts at reduction had been made for several hours on the previous day. He had had a glyster and the warm bath, and was twice bled, but without success. The taxis was again perseveringly attempted after admission, but failed, and the operation was therefore performed in the usual manner.

The practice of forcible reduction by the taxis in every case of hernia, which was first recommended many years ago by Geohegan of Dublin, had recently been revived by several professional friends here; and it was maintained by them, as by him, that the knife is unnecessary in any case. A hernia successfully treated in this way, about the time this case occurred, induced me to make the attempt. But the tumour was of such a size, and so incompressible, that it was evidently quite impossible that reduction could be effected by any force or manipulation; and I therefore desisted, and had recourse to the knife. The case was found to be congenital in its position; that is, the gut was in contact with the testis, and so much distended with air, that great difficulty was experienced in reducing it, even after the stricture, which was partly formed by the thickened neck of the sac, and partly by the upper pillar of the oblique muscle, had been freely divided.

He had slight vomiting after the operation. An enema produced no effect. In the evening he had pain about the umbilicus, and the pulse had risen to 104. He was bled from the arm and leeches, and the bowels soon after yielded to mild laxatives; so that he was convalescent on the 4th, and was dismissed cured on the 25th September.

The success in this case, after so long a period of strangulation (48 hours), I attribute to the venesection before admission, to a good habit of body, and to the active treatment of the inflammatory

symptoms which followed the operation. But such cases should not induce us to delay when the symptoms are well marked, and the taxis, when properly attempted, has failed. In a patient who is able to bear it, I am inclined to rely chiefly on venesection, and the taxis under chloroform. If unsuccessful after a fair trial of these, I would operate without leaving the patient. Herein, I am convinced, lies the cause of the less success of the English compared to the French surgeons, and it is not the operation, but the long duration of the strangulation, which is the cause of failure in the majority of instances.

About this period (June, 1824) an extraordinary case came under my notice at the Hotel Dieu. It was an artificial anus, under the care of M. Dupuytren. The curious circumstance was, that the patient had operated twice on himself for strangulated inguinal hernia. On the first occasion he had relieved the strangulation, and returned the parts; but they came down again, and in his second operation I was informed that he had laid open the gut with the knife, and thus occasioned the disease for which he was under treatment when I saw him.

Case V.—Fracture of the Cranium—Trepine.—Robert Taylor, aged 18, was admitted into the Royal Infirmary on the 14th February, 1823. When firing a fowling-piece seven weeks previously, it burst, and the breech struck him on the left side of the forehead, at the margin of the hairy scalp. He could give no account of the immediate effects of the accident, but at the injured part there was a triangular cicatrix, covering a deep depression in the cranium. There was then no pain, except on pressure; but he complained of occasional vertigo, stupor, and frequent attacks of excruciating pain over the left eyebrow, with impaired sense of hearing and indistinct vision. The pupils, although rather dilated, contracted to strong light. Mind absent, and answered questions hurriedly, and as if he was surprised. Vomited almost every meal. Pulse 76. Tongue loaded, thirst; breathing slow. Felt weak, and slept ill. He was bled, and had a dose of castor oil.

On the following day the pulse was 92; the attacks of pain less severe. He had vomited the oil, and had, therefore, a dose of calomel.

On the 16th, a consultation advised investigation as to the previous state of the patient's mind, and his symptoms immediately after the accident. At the same time it was determined, that should any increase of symptoms occur, immediate recourse should be had to the trephine.

On the morning of the 17th, he had several violent paroxysms of pain over the left eyebrow. About noon he was seized with stupor, and his breathing became stertorous. The pupil of the left eye was much dilated, and that of the right was much contracted. At 2 p.m. three pieces of bone were removed by the

trephine, from the immediate vicinity of what, in the case, was styled a depression, but, on laying open the scalp, was found to be a complete perforation of the bone. Two large spiculæ of the inner table, which were sticking in the substance of the brain, were removed. There was considerable hæmorrhage from the vessels of the bone, but no collection of blood or matter had formed between the skull and dura mater, or between the latter and the brain. The scalp was reapplied, and lightly dressed with straps and a roller. He was put to bed, but no relief was afforded by the operation, and he died at 7 o'clock p.m.

Inspection.—On removing the calvaria, the appearance of the dura mater was natural, except at the point corresponding to the injured portion of bone, where there was a small rupture of that membrane, through which a portion of brain, as large as a garden bean, protruded, being of a reddish colour, and softened in texture, though tough. It had also the appearance of being strangulated. On raising the dura mater, it was found to have contracted a pretty general, though slender adhesion to the surface of the pia mater covering the left hemisphere of the brain, especially at its anterior part, and in the vicinity of the injury. On rupturing the adhesions, the surface of the pia mater was seen covered by a thin coating of reddish semi-organized lymph. A portion of the left hemisphere, in the vicinity of the injury, being now removed, an oozing of pus was observed, in small quantity, from the substance of the brain. The incision being carried deeper, an irregular cavity was discovered in the medullary substance, containing above an ounce of well-formed yellow pus. There were several smaller globular cysts in the vicinity of the large one, also containing pus. The substance of the hemisphere retained its natural colour, and no sign of increased vascularity was observable. Nothing morbid was discovered in the opposite hemisphere, or in the ventricles or base of the brain.

There can be little doubt that, in this case, the sharp spiculæ of bone which had penetrated the dura mater were the exciting cause of the inflammation in the substance of the brain, which ended in these encysted abscesses. There can be as little doubt that the application of the trephine *immediately after the accident*, followed up by appropriate treatment otherwise, would have afforded the patient a far better prospect of recovery than he had after the delay that took place. The symptoms immediately following the injury were not given exactly enough. But it is quite clear that the primary rule of practice, in all such cases, should be to obtain information as to the state of the bone by free exploratory incisions through the injured part of the scalp. The unsuccessful results so often following the use of the trephine, in compound fractures of the cranium with depression in adults, should never deter us from adopting a practice so obvious and necessary. In young subjects there is no want of encourage-

ment, so far as my experience goes; but in all such cases disappointment will follow, unless a rigid antiphlogistic practice is at the same time adopted.

Case VI.—Fungous Exostosis of the Bones of the Pelvis.—John Henderson, aged 39, warper; admitted Sept. 8, 1827.—About six months previously, without evident cause, began to be affected with occasional darting pains about the sacrum, and in the situation of the left hip-joint. For the space of two months afterwards, these pains were inconsiderable, and he could walk pretty well; but at the expiration of this time the symptoms became greatly aggravated, the pain being more severe, occurring more frequently, shooting down to the knee, and sometimes as far as the ankle. Four months thereafter he became unable to walk from the severity of the pain, particularly in the groin, and along the inner surface of the thigh. At this period there was observed, for the first time, some firm elastic swelling in the space between the sacrum and trochanter major. This swelling communicated a sensation so nearly resembling fluctuation, that it was by some thought to contain fluid. It was at this time that he was admitted into the medical wards of the Infirmary. While he remained there, cupping-glasses, blisters, and a caustic issue, were applied to the hip, but the disease increased rapidly. At the date of his admission into the surgical ward, the left hip was greatly swollen, but maintained its natural shape; the swelling extended to the crest of the ilium, the median line of the sacrum, and half way down the thigh. There was still some elastic swelling behind the trochanter major, which was evidently deep seated. The integuments over the affected part were cedematous, and the affected limb, from inclination of the pelvis to that side, seemed half an inch elongated. He was unable to rest on the limb, from stiffness about the hip, pain in the groin, and about the sacrum. Motion of the thigh excited pain, but he did not suffer when lying at rest; nor did pressure on the trochanter, nor of the articulating surfaces against each other, give pain. The thigh was bent forwards, and he could not extend it completely. His health was fast giving way. Feet becoming cedematous, and urine scanty and high coloured. Body considerably emaciated.

He remained in the hospital till the 22d of November, when he died. During that time the swelling of the hip and left side of the pelvis increased steadily; he became hectic, and affected with general anasarca, and sunk gradually, without much increase of pain or any visceral disease. Previous to death, the hip was about double its natural size. He had taken various diuretic and mercurial medicines. An incision through the muscles was made behind the trochanter major, as it was thought doubtful, at a consultation, whether there was matter in this situation, but none was found; and lastly, the hip was rubbed with the ointment of the hydriodate of potass.

Morbid Appearances.—The bones forming the left side of the pelvis, with the exception of the sacrum, were surrounded by a large quantity of a firm, slightly elastic substance, easily cut, and having a semi-cartilaginous consistence. The cut surface presented an almost uniformly yellowish-white appearance. On the dorsum of the ilium, this substance was from 5 to 7 inches in thickness; the glutei muscles were much diminished in size, and more superficial than the tumour. On the internal surface of the pelvis, this substance was from 3 to 4 inches in thickness, and occupied the situations of the iliacus internus, psoæ, levator ani, and obturator internus muscles, no traces of which remained, except a very small portion of the iliacus internus, which was near the crest of the ilium. It also arose from the anterior part of the os pubis, and the femoral artery was seen unaltered in structure, passing through its substance. It arose, likewise, from the bones about the foramen ovale externally, and passed an inch or two down the femur, but did not adhere to the periosteum of this bone. Those parts of the tumour which were deep seated, or near the periosteum, were traversed by spiculæ of new bone. On the dorsum of the ilium, behind the acetabulum, this new bone was from half an inch to an inch in thickness. In all the other parts there was only a small quantity of new bone formed in the neighbourhood of the periosteum. The consistence of the tumour was firmer the nearer it was to the old bone, and firmer on the dorsum of the ilium than on the internal surface of the pelvis. The hip-joint was sound. The lower half of the body was very œdematous, especially the affected limb. Thoracic and abdominal viscera were natural in appearance.

In the 4th, 5th, and 6th plates, attached to the third volume (third edition) of Boyer's "*Traité des Maladies Chirurgicales*," figures are given of an Exostosis of the Femur, apparently of the same nature with the case of Henderson. The true characters of Henderson's disease, however, were not correctly discovered until the parts had been macerated, when a splendid specimen of arborescent exostosis was obtained.

VII. *On the Developement of Cystic Entozoa in the Human Kidney (with an Illustrative Case).* By T. HERBERT BARKER, M.D., F.R.C.S.E., Bedford.

(Read before the Medical Society of London, December 15, 1855.)

SINCE the time when the distinguished Rudolphi, to whom we owe the name and definition of the Cystic Entozoa, finished his interesting researches, the subject of the developement of these animal growths in the human body has attracted some attention in the pathological world. Considering, however, the great

importance of the subject as a practical study, it has not, I conceive, received from scientific medical observers that amount of careful attention which it so richly deserves.

This neglect or omission in pathological science arises possibly from two causes:—first, from the fact that, comparatively speaking, the discovery of the presence of entozootic cysts, either in the dead or living body, is of rare occurrence, at least in this country and on the continent of Europe; and, secondly, from the circumstance, that any inquiry into the origin and nature of these cysts involves the consideration of various details, facts, and theories, belonging almost exclusively to the domain of Natural History—a department of science which, as yet, has never been brought into any very intimate alliance with pathology.

Content with pointing out these possible causes as having led to a certain amount of barrenness in this department of pathology, and without at all assuming to myself any intention of filling up a gap in pathological literature, I have thought that it might prove of interest to the members of the Medical Society of London, and at the same time prove useful to some after and more elaborate enquirer, to place on record a case in which the principal symptom was the emission from the urethra of large numbers of one of the cystic entozoa.

A. F., aged 28 years, plumber, glazier, and painter, came under my care on 17th December, 1853, with dull heavy pain in the loins, particularly on the left side, frequent desire to pass urine, and slight difficulty in voiding it. The urine was not particularly high coloured, and contained no deposit on cooling. The specific gravity was 1020. Treating the case as one of common lumbago, which at first sight it closely resembled, I prescribed simply ten minim doses of potash water, with thirty minims of sweet spirits of nitre in camphor mixture, together with an aperient of calomel and jalap, and an embrocation for the loins of ammonia, laudanum, and soap liniment. On the 22nd December he observed to me, that during the early part of the past night he had experienced greater difficulty than ever in passing urine, and that for some hours he had been unable to pass a single drop. Early in the morning he passed some little jelly-like masses, four in number, which he called “bladders,” and the emission of which gave him instantaneous relief. They were hydatid cysts. Subsequently, he sufficiently recovered to follow his occupation during the summer of 1854, suffering nothing more than an occasional frequent desire to void urine.

On September 10th, he passed six of these cysts, but with less pain and difficulty than on the former occasion—a result which he attributed to ten drops of the oil of turpentine, which had been recommended to him, and which greatly increased diuresis. The urine, after the passage of the cysts, being some-

what tinged with blood, I recommended merely a continuance of the medicine I had previously prescribed, adding only to each dose half a scruple of the sesquicarbonate of soda.

On November 16th, he passed four of the cysts, the urine not being bloody afterwards. The passage of these cysts was, however, preceded by severe pain in the region of the left kidney, by the passage of several pieces of clotted blood, and by considerable difficulty in voiding urine. Indeed, for two entire days he passed no urine. On this occasion he took nineteen drops of turpentine within two hours, but in divided doses. Shortly after taking the turpentine, the pain in the left kidney suddenly ceased, with a sensation which, to use the patient's own words, seemed to indicate that "something had suddenly broken in the kidney." He then complained of pain along the left iliac region, which continued for several hours, and ceased as suddenly as the previous pain had done. After this, all attempts to void urine were accompanied with pain along the urethra, premonitory to the expulsion of the cysts from that passage. The cysts passed on this occasion were larger than before, and, after their emission, all pain ceased; and he continued in good health, with the exception of an occasional dull aching pain in the lumbar region, especially on the left side, from the date I have named (November 16th), until the 9th December of the same year.

On December 9th, he passed five cysts, but all of smaller size than those referred to in the preceding paragraph, and the passage of no others was observed until December 31st, when he awoke in the morning with acute pain in the loins, and all the other symptoms described previously as occurring on November 16th. During the day he passed not fewer than twenty cysts—one at 8 a.m., eleven at 1 p.m., five at 7 p.m., and three at 11 p.m. He had never previously passed so many as eleven with one effort; nor has he since. The cysts passed in rapid succession, and some were of a size as large as a small walnut. He felt tenderness in the urethra for a few days after this date, but considerably less pain in the loins.

On January 1st, 1855, a single cyst was passed in the morning; on the 2nd, two others also in the morning; on the 3rd, one in the afternoon; and on the 10th, two in the morning. From that date (January 10th) until July 23rd, the peculiar class of symptoms to which he had been liable never left him entirely. He had frequent attacks of pain and difficulty in passing urine, followed often by the expulsion of cysts, between seventy and eighty of which he has brought to me on various occasions. He passed one large cyst on the 23rd July. On the 9th November, he passed what appeared to be a portion of a very large cyst, and on the 11th November, he passed an entire cyst of moderate size. Since the last date to the present time (December 8th), he has passed no other cysts. He continues to take

the diuretic medicines, and occasionally, when the pain is more severe than usual, a dose of the turpentine. Before the 23rd July, he frequently experienced an immediate cessation of the pain in the iliac region, upon what he called the "dropping" of something which he distinctly felt, and which, as I take it, must have arisen from the escape of a cyst from the ureter into the bladder. These sensations were always confined to the left side. The relief has not been so frequent or decided since that date, and he is daily expecting to pass more cysts. Latterly, he has also complained of pain in the region of the right kidney. Careful examination has failed to detect any abdominal enlargement.

While these remarkable and well-marked symptoms were thus progressing, my attention was often directed very naturally to the urine, which was examined on various occasions. I have already remarked on the passage of blood in small quantities after the expulsion of the cysts; but as this was only a mechanical result, arising from slight lacerations in the canal, from the distention caused by a cyst, and the violent efforts made to expel it, the mere presence of a few blood-globules, which were often found in the urine, is easily accounted for. In addition, the urine was often loaded with the lithates and phosphates, and occasionally I detected microscopically the crystals of lithic acid. The same crystals were not unfrequently found attached to the outer surface of the cysts themselves.

The man's general health having suffered but little interruption while the events now described were taking place, I have really already written a complete history of the symptoms presented, as well as of the treatment pursued.

For special reasons, to which I shall refer in the sequel, it is right to record the diet of the patient. For some years past he has rarely eaten either beef or mutton, having a natural aversion to these meats, and for one year, six years ago, he was a vegetarian. As an ordinary rule, however, he has lived on pork, and thinks that, on an average, he has taken "pig's fry," consisting principally of the liver, at least twice weekly. He has on more than one occasion eaten "measly" pork, and pig's chitterlings (the intestines of the animal) has been a frequent dish. He is also very fond of sheep's head, and especially of the brains, but does not know whether the brains he has thus taken were those of "sturdy" sheep. He has likewise been accustomed to take in the morning herbal bitters, such as decoctions of horehound, wormwood, and agrimony. He is fond of coarse brown sugar. He does not remember ever having eaten meats badly cooked, and has not suffered from other forms of entozoa, except *ascarides*, which troubled him greatly in early life. His wife (since their marriage) has lived on the same diet, but has not shown symptoms of the same disease.

CHARACTERS AND EFFECTS OF THE CYSTS.

From the commencement of the symptoms until the present time, upwards of 150 cysts have been passed. Their size has varied considerably, from that of a large pin's head, or very small pea, to a small walnut. They have generally been thrown off in clusters, or rather one after another in quick succession, often leaving long intervals of time between; and the amount of pain which has been induced by them has, *cæteris paribus*, varied in proportion with their size, their number, and the rapidity with which they were expelled. It is scarcely fair to say that they ever gave rise to retention of urine to a degree which might be considered dangerous, since the force of the urinary current, under the expulsive power of the bladder, set up an amount of mechanical pressure, sufficient sometimes to rupture, and always to expel, the largest cyst after a time. The cyst also modelled itself to the urethral tube, and after it had passed from the ureter (where the force for pushing it onward was much less) into the bladder, the main difficulties were over, and the after expulsion from the urethra was speedily, though very painfully, effected. Watching the case, as I did, very closely, nothing could be more evident to my mind than that the cysts proceeded from the pelvis of the left kidney, along the ureter into the bladder, and so, by mere continuance, into the urethra. I could, in fact, trace the course of the cysts by following out the symptoms in detail. First, there was the dull aching pain, accompanied with sensation of fulness in the loins, and so essentially indicative of congestion of the kidney, and obstruction to the immediate escape of its secretion; next, the sharp, lancinating, descending pain, indicative of the obstruction, whatever it might be, in the ureter; thirdly, the immediate sense of relief, accompanied with the sensation of "dropping" already described, incident upon the cyst finding its way into the vesical cavity; and, lastly, the well-known straining attempts to micturate, accompanied with pain along, and particularly at the termination of the urethra, so strikingly indicative of an obstruction in that canal, and terminating abruptly on the emission of the foreign substance.

I have referred to the varying sizes of the cysts, the next step was to discover its internal character. In common parlance, the cysts were hydatids; but as an improved knowledge of the nature of cystic formations has now rendered the term "hydatid" a generic, and scientifically an obsolete name for a variety of forms of cystic developements, I shall only use it hereafter in this general sense. The cysts (several of which are now before the Society) consist of two coats, the contents being generally expelled prior to their being thrown off, from rupture. A few smaller ones, however, passed entire, and these contain a greenish albuminous fluid. Anxious to ascertain more accurately the nature of their contents,

I sent several of the cysts to Professor Quekett, who found them to contain the cystic entozoon, known as the *Echinococcus*, and which has been accurately described by Professors Owen, Müller, and Quekett. These *Echinococci* of the human subject differ, according to Owen, from those found in the hog, in having sucktorious cavities external to the circle of teeth, and thus closely resembling the head of a *Tænia* appended to a small cyst. The *Echinococcus* was only developed in the larger cysts; and a remarkable circumstance connected with the inner surface of all the cysts was, that it was covered with crystals, having all the characters of the triple phosphate. For the following more accurate description, I am deeply indebted to Professor Quekett:—"The cysts sent to me for examination varied in size from one-sixth to half an inch in diameter; their external surface had a semi-opaque granular appearance; two of the smaller ones were more transparent and of globular figure, the others being flattened and shrunk, as though they had lost a portion of their fluid contents. On opening two of the larger cysts, a quantity of fluid, containing a considerable amount of granular matter, escaped. This last, on microscopic examination, was found to exhibit fragments of *Echinococci*, amongst which the minute but characteristic hooklets could be readily discovered. The wall of each of the cysts was easily separated into two layers, which, under a more careful manipulation, could be farther separated into several laminae of semi-transparent and nearly structureless membrane, which, in some situations, was covered with minute granular matter. In the larger cysts, the innermost layer was covered with numerous minute prismatic crystals, having the general appearance of triple phosphate. In one of the larger cysts, similar crystals were found adhering to the outer surface. The crystals were best seen in the newly-opened large cysts, but neither crystals nor *Echinococci* were visible in many of the small ones. When an attempt was made to mount a portion of the inner membrane between glasses, in order to show the crystals, they were found to be so readily detached that the greatest care was necessary to keep them *in situ*. I have never before had an opportunity of examining entozoa of this kind voided with the urine, and the only way in which I can account for the presence of the crystals within the cysts, is by supposing that a certain portion of urine must have gained entrance into them by endosmosis."

I do not know of many recorded cases of a strictly similar kind to this. One is described by Professor Müller, where an *echinococcus* was developed in the urinary bladder, and was passed off by the urethra. In another case, which Professor Quekett has described and figured, the same entozoa was found in the liver of a patient under the care of Mr. Curling.

In an excellent report in the *Medical Times and Gazette* for February 17th, 1855, nine or ten cases are given, in which by-

datids passed by the urethra ; three of these cases occurred under the observation of Mr. Gay. In commenting on these cases, the reporter takes pains to prove that the cysts were not necessarily, and even not probably, connected with the kidney originally, but rather that the hydatids found their way to the urinary canals from adjacent structures. However that may be, I think there is not the least doubt that in my case the developements took place in the pelvis of the kidney, where, I suspect, they were long detained, and were then thrown off *en masse*. This idea receives some confirmation in the discovery of the triple phosphate in the interior of the cyst. As the triple phosphate when formed is insoluble, we cannot suppose that it was absorbed directly into the cysts by osmotic action ; but it is not impossible that, while these were retained in the pelvis of the kidney, or in the bladder itself, the urea and phosphate of magnesia, both of which are highly soluble, were thus taken into the cysts by endosmosis, and that the crystalline salt was chemically formed there by the decomposition of the urea into ammonia, and its combination with the phosphate of magnesia.

In the following case, kindly communicated to me by J. J. Evans, Esq. of St. Neot's, there were some points analogous to those occurring in my patient :—

“ M. S., aged 26, single woman, a dressmaker, of short and delicate stature and swarthy complexion, and whose parents both died at an early age, first consulted me in November, 1847, having been for some time most unsatisfactorily treated by another practitioner. She complained of acute pain in the right side, just below the margin of the ribs; she described the pain as of a severe character at one moment, whilst at another time it was more obtuse, of a forcing character. She suffered from almost constant sickness, and could not bear pressure either on the side or scrobiculus cordis. From the trifling examination she was able to bear, and from the quantity and character of the secretions, I thought the case might be one of biliary obstruction, and therefore prescribed mercurial purgatives, with empl. lyttæ. I could only detect a trifling enlargement in the side affected. In a day or two, having been much relieved of the pain and sickness, she left her bed and took to her ordinary occupation: the following day she had much difficulty in passing her urine, which had been for some days less copiously secreted, and she observed that it was slightly opaque when passed, and contained flakes of membrane. On examining these flakes, I immediately detected several portions of the cysts of large hydatids, whilst numbers of smaller ones floated in the urine. These latter were entire, and varied from the size of a pin's head to that of an ordinary grape. They were perfectly unconnected to each other. From the size of the fragments which had been passed, I should consider that some of the large ones had equalled the size of an egg. The patient now seemed tolerably well, and

I left off my attendance, having satisfactorily explained to her the nature of her case, and that she would scarcely be fortunate enough to escape a repetition of the disorder. In February, 1848, she again sent for me, but I fancied that she had rather anticipated an attack, as she got well without anything unusual occurring. In February, 1850, I was again called in, and found her suffering from very severe pain in the side. I now imperatively carried out my examination, and detected a lobulated tumour, measuring, as felt through the abdominal integuments, about 8 inches by 4 in breadth and thickness, immediately in the region of the right kidney. I prescribed anodyne and demulcent medicines, and in a day or two the tumour gradually dispersed, the pain, at the same time, subsiding. The following day a large quantity (many hundreds) of hydatids made their appearance. In May, 1851, she had another attack, but passed only a few small ones. She relapsed again in March, 1853, also in February, 1854, as well as in the following July. At the last-named period she passed a large number, some of considerable size, one of which so obstructed the urethra as to require manual removal. The tumour in the side had entirely subsided, and has not at present (November, 1855) reappeared. From the foregoing notes there can be no doubt as to the nature of the case—the only question is as to locality. If the hydatids had formed in the pelvis of the kidney, would they not have been earlier destroyed by the action of the urine; or, if not, could they have produced the lobulated feel which I have described, as if felt through the parietes of the kidney? I do not question the latter, as I have seen kidneys so extenuated in their walls by distention as to admit of distinct manipulation of their contents. With regard to the destructive action of urine upon living hydatids indigenous to it, I can only say that it admits of question; besides, I should certainly expect, if examining such a subject, to find the hydatids enclosed in a cyst derived morbidly from the structure in which they were situated, in which case they would not be in contact with the urine. If the cyst had been external to the kidney, I think the hydatids could scarcely find their way into the ureter, since, to effect their passage when large, a force is required which I can only discover in the accumulated urine within the pelvis of the kidney.

“In regard to diet,” Mr. Evans further writes, “I have ascertained from my patient, that, about seventeen years since, she, as well as the whole of the family, were much in the habit of eating pig’s brains in large quantity, as well as occasionally pig’s fry; but that, since her first symptoms of disorder, now ten years ago, she has lived principally on mutton. The statement she made was, that her father, being a waggoner, was in the habit of bringing home large pigs’ heads. Her mother usually put the brains into a pudding with seasoning, to constitute a meal for the family, and

they individually ate heartily of it. No other instances of hydatids were known in the family. My patient is now so far well, that she is contemplating matrimony. The side on which disease existed being now less than the other, and giving her the sensation of being drawn inwards."

NOTES ON THE ORIGIN OF CYSTIC ENTOZOA.

It is not my intention, on this occasion, to enter into any wide generalizations on the interesting subject of the origin of these organic forms in the human subject, and in the bodies of animals inferior. The subject is one which is at the present moment fully engaging my attention experimentally; but the facts thus gathered are as yet not fit for the scientific garner. It may, however, be of interest to sketch out briefly a history of such facts as have been arrived at on the subject by other authorities up to the present date.

In regard, then, to the natural history and pathology of the cystic entozoa, great light has been thrown since the time of Rudolphi, by Professor Von Siebold, Küchenmeister, Goodsir, Owen, Quekett, and, more recently still, by Dr. Allen Thomson of Glasgow, to whose admirable paper on the Entozoa, in the Glasgow Medical Journal of July last, I am indebted for much information. Dr. Thomson has very properly pointed out that the various forms of cystic entozoa, including the *Cysticercus*, *Cœnurus*, and the *Echinococcus*, are nothing more than the various larvæ or early stages of the complete or mature entozoa belonging to the order Cestoidea, of which the common tape-worm affords the best illustration; and that these cystic entozootic developments are all non-sexual and incomplete animals, so long as they are parasitic. The same writer has also demolished most effectually the old and peculiar theory of spontaneous generation, and has shown, by a reference to the experiments of Von Siebold, Küchenmeister, and others, a fact which some further experiments of my own tend strongly to substantiate, that all forms of entozoa found in the body arise from the taking in of some larvæ or ova; and that the various developments thus induced are subject to certain fixed laws of transformation, which are at once as interesting to the pathologist as to the natural historian.

It would seem that some of the entozoa are developed from ova, that others undergo metamorphosis, and that a third class go through an alternate generation, or metagenesis. Dr. Thomson remarks, that all the cystic entozoa inhabit the shut cavities, or the structure of organs, and consist of the *tænia*-head, with a circle of hooklets and four oscula; the head being united with the vesicular body by a neck. In the specimens I lay before the Society, these hooklets are very prominently marked. The *Echinococcus* (the form peculiar to the case I have described)

diters from the *Cœnurus cerebialis*, in that the budding heads become detached (I am quoting Dr. Thomson's words), and remain suspended and alive in the fluid of the vesicle. This was the case in my specimens.

But the most curious point connected with these inquiries relates to the transformations which these entozoa may undergo in the body, and includes the fact that, under favourable conditions, the various forms of cystic entozoa become converted into the cestoid variety, that is to say, into tape-worms. I do not apologise for repeating to the Society that part of the author's paper to whom I have above referred, which details some of the experiments upon which this fact is based.

Küchenmeister of Zittau found, by direct experiment, that when young dogs were made to eat along with their food a number of the *Cysticercus pisiformis*, so common in the rabbit, these entozoa were converted in a few weeks into the *Tænia serrata*. He also found that, by giving the *Cœnurus cerebialis* of a sheep to a dog, the same result ensued. Thirdly—and this is the most telling experiment with regard to the human subject—he (Küchenmeister) gave a number of *Cysticerci*, taken from the hog and rabbit, to a condemned criminal, at periods varying from 130 to 12 hours before execution. After death, a number of young *Tæniæ*, in different stages of development, were found in the intestines. After proving his position so far, the same experimentalist varied his experiment. Having produced a *Tænia serrata* in a dog, by feeding it with the *Cœnurus*, he caused lambs to take the *Tænia* joints, and obtained, in the short space of 18 days, a development of the *Cœnurus* in the brain, in the muscles, and under the skin of these animals.

Similar experiments have also been performed by Von Siebold, who found that, when the cyst and caudal vesicle of a cystic entozoon were given to an animal, the cyst was dissolved in the stomach, but that the entozoic larvæ passed, unaffected by the digestive process, into the duodenum, giving rise there, as in Küchenmeister's case, to a development of a cestoid entozoa, or tape-worm. After this, therefore, he gave the larvæ without the cyst, and with the same result. In the short space of two or three days, the head and neck of these larvæ introduced into the duodenum, and to the walls of which they attached themselves, were seen to enlarge, the head and neck undergoing but little change, but the body elongating, and the transverse grooves appearing and dividing the body into segments. From further experiments it seemed, that in the course of two months these *Tænia* attained the length of from 10 to 12 inches. Siebold also, like Küchenmeister, performed converse experiments, and produced cystic entozoa by the administration of the *tænia*-head.

Another fact came out from these experiments, namely, that the *Echinococcus* entozoon produced, when administered to a

living animal, a special form of *Tænia*, in which the number of joints was never more than three, and these small, with the reproductive organs confined to the two last joints. This peculiarity is rigidly marked, and has fairly given rise to a specific name to the *Tænia* thus produced, namely, the *Tænia Echinococcus*.

On the other hand, the *Tæniæ* produced by the administration of the *Cœnurus* and the *Cysticercus* are identical; they are long, and contain many joints.

Dr. Thomson has very practically observed how intimately the subject of the developement of the entozoa is linked with the origin of these products in the human subject, from the imbibition of foods. He thinks the *Tænia* in the human subject is dependent on the swallowing of the larvæ of the *Scolex* with the food, and that the *Scolex* itself has its most common source in the *Cysticercus cellulosæ* of measly pork. This, he says, agrees with the general idea, that in many cases of *Tænia* the people are accustomed to take uncooked animal food. The origin of the cystic entozoa in the human subject is not yet known, but its cause is possibly the same as in the lower animals. The *Cœnurus* of the sheep seems to proceed from the larvæ of the *Tænia* thrown off by the dog, and *vice versâ*. The same author remarks, that the inhabitants of Iceland are at this moment suffering from a prevalent hydatid disease, which Von Siebold thinks is occasioned by the people swallowing, accidentally, the ova of *Tænia* thrown off by dogs, of which immense numbers are kept in that island. He further states, that *Tænia* is common among the Abyssinians, who, it is well known, are accustomed to take uncooked animal food. I would notice, incidentally, that this part of our inquiry has an interesting though indirect bearing on the subject of the propagation of cholera, as suggested by the learned and indefatigable President of the Medical Society of London, Dr. Snow.

From the facts I have already stated regarding the patient who came under my own care, it is worthy of observation that his diet has certainly been very peculiar. At the same time his wife, who has lived on the same diet, has had no symptoms of a similar character. This fact it is interesting to note, since, in one of the cases under Mr. Gay, a man and his wife were both simultaneously the subject of hydatids, as though from a common cause; and in the inferior animals grouped together, as the writer in the *Medical Times* observes, the hydatid disease generally develops itself in the whole flock at the same time.

On the supposition that the ova of certain forms of cystic entozoa are capable of leading, in the human subject, to the development of other forms of cystic growths, one might infer that this patient had ample opportunities of becoming impregnated with the *Echinococcus*, and might thus trace his disease to a dietetic

source; but at the present time, and in the absence of further experiments, it would possibly be going too far to consider this matter otherwise than as a probable hypothesis.

MIGRATIONS.

However originating, it becomes an interesting question how the entozoa reach the different parts of the organism. Dr. Thomson, to whom I have so often referred, enumerates three ways of migration:—1st, By being introduced into the bodies of animals by food or drink; 2dly, by piercing the integuments or other tissues; and, 3dly, by piercing the membranes or parenchyma of organs entering the blood-vessels, travelling along them with the blood; and ultimately, by piercing these coats, to gain other situations.

The organs or tissues of the body where these entozoa are most frequently located in man, are the liver, the cellular tissue, the muscles, the chambers of the eye, and the abdominal cavity. Mr. Goodsir has related several cases, in which the *acephalocyst* was found in the peritoneal cavity, as well as others of the cystic entozoa. Thus situated, these cysts sometimes gain an enormous size; but I think it an open question, whether the special forms of entozoa do or do not require special organs for their development. At all events, it is certain that all the mature entozoa, as the *Cestoidea*, require a larger cavity; and that it is only the immature or cystic variety that will exist in a close cavity.

EFFECTS OF CYSTIC ENTOZOA ON HEALTH.

With regard to the effects of the cystic entozoa on the economy, most writers are agreed that, in the human subject, fatal results rarely occur. We have evidence, however, in the inferior animals, that death does take place as a result of their presence. This is especially the case with sheep, which suffer from the hepatic "fluke;" but, in this case, it must be remembered that the cysts exist in great numbers. The *Cœnurus cerebralis*, when occurring in sheep, produces the peculiar symptoms of pressure on the brain, with giddiness, staggering (hence the common name which is sometimes applied, "staggers"), and sometimes a peculiar tendency to turn round. In these cases, however, the general health of the animal is often not impaired, and a skilful operator, in the person of the village blacksmith, not unfrequently effects a cure by trephining the skull, and removing a mass of the cysts.

Even in the human subject, in very rare cases, these cysts also form in large numbers in the liver and kidneys, without being destructive to life, an excellent example of which was brought forward in this Society by Dr. Richardson in the present session, and which occurred in a patient under the care of Dr. Mackinder of Gainsborough. In this case, the liver and kidneys were almost disorganized by these cysts; but in the kidney, the cysts were

developed in the structure of the organ, and not in the pelvis, so that they were not observed to pass off with the urine; and the specimen, from having been long kept in spirit, does not indicate to what order of entozoa the cysts really belonged. As a general rule, then, we may lay it down that the development of cysts in the human subject is limited; that the ova from which they spring are accidentally swallowed, perhaps on one occasion only; and that, when situated in deep-seated structures, the further propagation of the entozoa is prevented, as Mr. Harry D. Goodsir opines by the circumstance that the rupture of the cyst is prevented, that decomposition takes place in the contents of the cyst, and the vitality of the entozoon is thereby destroyed. It would appear, also, that these cysts, when existing in the human body even in large numbers, do not abstract so much of the blood-plasma for their own existence, as to interfere materially with the health of the infected subject; but it is worthy of remark, that in very small animals, such as the hare, and rabbit, and rat, this effect is very speedily produced, a result which one might, *à priori*, expect.

Whenever the cystic formations seem to interfere materially with the human economy, it is by a mechanical process, as when they form in large numbers in the peritoneal cavity, and each cyst enlarges to a great extent, so as to produce pressure; or when they prevent the flow of urine, either by finding their way into the urinary passages, as in the case I have described, or where they are so placed as to press upon some part of the urinary canal externally, as in a case which occurred under the late Mr. Callaway, and related in the *Medical Times*, where a large hydatid tumour existed between the bladder and the rectum, and, by pressing upon the neck of the bladder, caused a fatal retention of urine.

Dr. Allen Thomson refers to a remarkable example of the prevalence of cystic entozoa in the human subject, which has been recently described by Dr. Schleisner, in his "*Medical Topography of Iceland*." The hydatids affect the liver, peritoneum, and subcutaneous tissue. Eschricht writes to Von Siebold, that this disease has extended itself to such an alarming degree—about a sixth of the whole population being affected with it—that it is attracting considerable attention at Copenhagen. It produces a long protracted illness, and terminates with a painful death, no means of cure having yet been discovered.

TREATMENT.

But little admits of being said in regard to the treatment of cases in which the cystic entozoa exist. The main point of practice which requires to be brought out, lies, in truth, in a more elaborate inquiry into the causes of the disease, and its effectual prevention. When existing in the structure of organs, as the liver, the diagnosis is well nigh impossible, and the treatment *nil*.

In other cases, where the cysts form large tumours within reach, as between the bladder and rectum, operative interference might be of first importance, if a clear diagnosis could be established. In cases such as that which occurred in my practice, where the cysts are passing by the urinary organs, the treatment obviously is, as in the case of cestoid entozoa in the alimentary canal, to hasten their elimination, by increasing the natural secretion of the part. For this purpose turpentine, in diuretic doses, answers as well as it does in purgative doses, when the entozoa infest the alimentary canal. At the same time, it is always advisable to make out any peculiarities in diet to which the patient may be subject, and to modify the diet-roll, if any suspicion exists as to the dietetic origin of the foreign product.

The subject thus briefly brought before the Society, opens, as I think most practitioners will admit, a wide and highly valuable field of practical inquiry. However much we may be in the dark as yet on many points, there can be no doubt that great advances have been made, and that we are at last on the true track towards discovering the origin of the entozoa; and as book opens book, and one science betrays the secrets of another, so it is to be hoped that this inquiry may lead us into spheres of pathological observation, which, at the present moment, may seem removed altogether from this special investigation.

Not many years ago, the whole question of the entozoa was a sealed and mystic volume, which, when broken into, was full only of hard sayings and speculations, partaking more of the character of old alchemy than of rational thought. Perhaps, indeed, no theory so entrapped the world for a time as that of spontaneous or equivocal generation, the utter and absurd fallacy of which is now so manifest. As time goes on, and experiments advance, it is not too much to suppose that we may consider the pathology of the entozoa in the light of a proved scientific problem, wrought out by the most rigid rules of the inductive philosophy.*

* The paper was illustrated by microscopic preparations, which had been kindly put up for the purpose by Professor Quekett, and by Mr. Stedman, of Sharnbrook, Bedfordshire. In these preparations, with the assistance of the powerful microscope belonging to Mr. Stedman, the Echinococci, with their hooklets, and the crystals of triple phosphate, were well shown.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

- I. *Nouvelle Fonction du Foie considéré comme organe producteur de Matière Sucrée chez l'Homme et les Animaux.* Par M. CLAUDE BERNARD, Docteur en Médecine, &c. A Paris. 1853.
- Leçons de Physiologie Expérimentale, appliquée à la Médecine faites au Collège de France.* Par M. CLAUDE BERNARD, Membre de l'Institut de France, &c. A Paris. 1855.
- Researches on the Nature of the Normal Destruction of Sugar in the Animal System.* By W. F. PAVY, M.D.
- Guy's Hospital Reports.* London. 1855.

THE works of M. Bernard, the titles of which stand at the head of this article, have created for their author a high reputation, not only in France, but throughout the world. His labours in experimental physiology have raised him to the distinction, than which none is higher in the scientific world, of being elected a member of the Institute of France; and it is only a few days ago, when, in consequence of the death of M. Magendie, he was recommended as the best qualified to fill the chair in the College of France, which that illustrious physiologist had so long occupied, and from which, while temporarily acting as the substitute of M. Magendie, he last winter delivered those lectures which are contained in the volume which at present more particularly demands our attention.

In M. Bernard we have not one who occupies himself either in the compilation of "Manuals" or the *carpentry* of "Systems of Physiology." He is not a pathological physiologist; he finds it to be an indispensable condition of experimental physiology, that its investigations should be conducted on the bodies of living animals ("investigation directe sur les animaux vivants"), for how, he asks, could we be conducted by anatomy alone to know that the liver produces sugar, which is incessantly demanded for the necessities of, and absorbed in, the function of nutrition?

Experimental physiology has, we suspect, but a limited number of devotees in the British islands. We happen to know a person or two who preserve a battue of frogs, and who keep "vivaria" of sticklebacks, it may be for useful as well as ornamental purposes, but we do not know any individual who keeps a kennel or preserves a warren for the purposes of experimental physiology. We have heard of donkeys who have been victimized by "woorara" poison for physiological purposes, and we have seen rabbits ruthlessly condemned "to pass that bourne from

which no traveller returns," in order to convince a class of medical students of the sure and certain effects of prussic acid in annihilating all the functions of the animal economy; but we are not quite sure that the "entente cordiale" is so firmly established, that the "Society for the Prevention of Cruelty to Animals" will accord so great a latitude to experimental physiology in this country, as seems to have been assumed by MM. Magendie and Bernard in France. We could not venture on an estimate of the number of unfortunate "chiens," "lapins," and "cochons d'Inde" who have been sacrificed upon its altars, and we dare not even enter upon the question of the morale of such a "massacre of the innocents." We shall assume, for the occasion, the convenient principle, that the end justifies the means, when these means are employed for so good a purpose as the discovery of scientific truth.

The subject of M. Bernard's first lecture is the special nature of the instruction of the College of France, as compared with that of the Faculties. "All the world knows," he says, "that the instruction of the College of France is of another nature from that of the Faculties, that it responds to other wants, that it addresses itself to another public, and that its manner of proceeding is essentially different." The Professor of the College of France does not take under his consideration that part of science which is acquired and established, but those parts of science which present lacunæ, for the purpose of filling them up; on the contrary, the Professor of the Faculties views science in a dogmatic light, and his object is to give a synthetic exposition of the collection of positive ideas which it has already acquired. The one is prospective, and the other retrospective. The eyes of the one are turned towards the future and the unknown, while those of the other are directed to the past and known.

We do not recognise the value of that liberty of investigation, in so far as a course of academic instruction is concerned, which M. Bernard claims for experimental physiology.

"We can change our subject," he says, "every year, or every half-year, and, even in the course of six months, our plan may be modified, if we fall upon a line of interesting researches, to pursue which, without delay, may be profitable to science." In order to teach, the subject-matter must be arranged beforehand, the illustrative experiments carefully prepared, and the whole mode of procedure laid down in quite as dogmatical a manner by the experimental Professor as is done by the Faculty Professor. It was owing to M. Magendie's adopting this mode of lecturing, that his success as a lecturer was not so great as it might have otherwise been. It is by months and years of patient investigation that the former makes discoveries of sufficient value and sufficient extent to qualify himself to be a teacher of original views. It is now twelve years ago since M. Bernard himself

commenced those researches which led to the discoveries which form the subject of these lectures.

We object to the cavalier way in which our author disposes of Bacon—as if the *esprit d'investigation* which he seems to assume as peculiar to himself, did not derive all its value from the fact, that it is in perfect accordance with the spirit of the Baconian philosophy—as if the principles which he lays down for himself were not those which Bacon had established as the only safe guides in experimental inquiries. These principles he states to be—1st, to establish facts or phenomena by observation and experiment; 2d, by induction from these facts to discover the general relations or laws; and, 3d, to proceed by deduction from these laws to the research of other facts, which can, in their turn, be comprised under general laws.

He concludes his first lecture by showing the incontestable value of physiology to medicine and pathology.

In his second lecture, M. Bernard gives an historical account of the discoveries made in regard to diabetes before he commenced his own investigations, in which it is curious to observe he has omitted all mention of the discovery which, of all others, was the most important, and tended more directly to that which has rendered his own name illustrious—we allude to the discovery of sugar in the blood and various secretions of the body. It was the late Dr. Macgregor of this city, to whom, as Dr. Watson of London remarks, we are indebted for the full exposition of this interesting fact, though traces of sugar in blood had been found by some previous inquirers. Dr. Macgregor's discoveries were published in the *Medical Gazette* in 1837. M. Bernard's first brochure on this subject appeared in December, 1843. When we consider that the sole evidence upon which M. Bernard ascribes to the liver its glycogenic or sugar-producing power, is the fact that the presence of sugar is detected in one part of the circulation—viz., the hepatic veins—and cannot be found in another—viz., the portal vein—we have done enough to show how much value ought to be attached to the labours of Dr. Macgregor. Willis was the first, in 1674, to observe that the urine of diabetic patients had a sweet taste; but it was Cowley, in 1778, who first isolated sugar from the urine. The question then arose, whence proceeded this saccharine matter? Rollo, in 1797, considered it to be the result of derangement of the stomach—that the gastric juices had acquired the morbid property of changing articles of vegetable diet into sugar. In consequence of this view, he had recourse to a diet purely animal for diabetic patients. In 1803, Nicolas and Gueudeville changed the name of diabetes to *phthisurie-sucrée*, and placed the seat of the affection in the intestine. They considered that the chyle, by some change in the intestinal juices, instead of being formed in the usual way, was elaborated in a less perfect manner, and deprived of its azotized elements. Hence they as-

sumed, that the proper treatment consisted in giving azotized substances, and they prescribed animal diet, ammonia, and phosphates. It was M. Chevreul, in 1815, who discovered that diabetic sugar was not that of the cane or beet-root, but grape sugar. In 1825, Tiedemann and Gmelin proved that sugar was a normal product of digestion in the intestines, and not the product of diseased action of the intestinal juices. M. Bouchardat, in 1838, revived the view of Rollo, that sugar was an abnormal product of digestion in the stomach, and was absorbed by the *vasa breviora* of that organ; but in his last work, in 1852, he gave up this theory, and adhered only to his mode of treatment, which consisted in removing from the diet of patients all matters containing sugar and starch—a mode of treatment which still prevails extensively in this country. M. Mailhe, in 1844, placed the seat of diabetes in the blood; and proceeding from the chemical fact, that diabetic sugar is destroyed by the presence of an alkali, he came to the conclusion that the therapeutical indication was to give alkalis. All these theories proceed upon the belief, that the sugar found in the animal system proceeds from external alimentary substances of a feculent or vegetable kind. M. Bernard considers this to be a physiological error. "We have proved," he says, "that sugar is not an accidental principle in the organism, that it is met with constantly in the economy, and that it is found formed by a function which is altogether special, whatsoever may be the nature of the alimentation. This glycogenic or sugar-producing function, which we have recently established, exists in man and in all animals. It will be our duty to give you its history; afterwards we will examine the diabetic state, which is, according to our view, nothing more than a derangement of this function. It will be the more necessary to establish a firm physiological basis for our doctrine, inasmuch as there is always an intimate connection between the therapeutics of this disease, and the physiological ideas which may be entertained of its nature." The first step in this inquiry is to distinguish the different characters and properties of sugar. There are two species of sugar in the vegetable kingdom—the one called cane, and the other grape sugar. This distinction is founded on the manner in which these substances comport themselves in the presence of acids and alkalis. Sugars of the first species—viz., such as cane and beet sugar—are not affected by alkalis, while acids transform them into sugars of the second species. The sugars of the second species—such as that produced from starch and from fruits—are not affected by acids, while alkalis completely change and destroy them. There is only one kind of sugar, viz., that of the second species, found in the animal kingdom. This substance is found in diabetic patients, in the liver in the healthy state, in milk, in eggs, in the allantoid, &c. The second step is the means of separating and detecting this substance in the animal economy with ease and

certainty. There are various ways of effecting this with more or less certainty, but we will only mention those which give certain results. Preliminary to the process of testing, however, we must obtain a tolerably pure solution of the substance to be operated upon. If the substance is solid, such as the liver, we must boil it in water, and obtain a solution of the soluble matter which it contains. If the substance is fluid, such as urine, this step will not be necessary. The best means of removing colouring and animal matters, is to mix the fluid with animal charcoal, boil and filter. It is necessary that the charcoal be proportional in quantity to the animal and other matters which it is necessary to have separated. The addition of water, even though it is necessary to render the mixture pulverulent, is sufficient to dissolve out of it the saccharine matter. Having obtained a comparatively pure solution, it is next necessary to obtain a reagent sufficiently characteristic to detect the presence of that kind of sugar which is known to be the only one present in animal compounds, viz., grape sugar, or glucose. M. Barreswill has supplied us with this reagent:—Dissolve 50 grains of cream of tartar and 40 grains of carbonate of soda in a third of a pound of water; add 30 grains of sulphate of copper in powder to this solution; boil and cool the solution; then add 40 grains of potassa dissolved in a quarter of a pound of water; then add enough of water to make a pound. This reagent, of a fine blue colour, is sufficient for our purpose; when boiled with a solution of sugar of the second species, the blue colour disappears, and a brown protoxide of copper appears. But this is more of a negative than a positive test. If we add yeast to the solution, if there is any sugar present, fermentation will take place, and it will be easy to collect both the carbonic acid and the alcohol produced.

M. Bernard claims the merit of discovering that animals, as well as vegetables, have the power of producing sugar quite independently of each other, and endeavours to explode the notion, that the sugar found in animals is the exclusive result of vegetable aliment. He proceeds to prove that the liver is the sugar-producing organ. The first step is to show, that, as in other secreting organs, there is always found a considerable quantity of the substance secreted, the liver, in a normal condition, contains sugar; and the next, that it is not found in any of the other secreting organs. Experiments have been made upon the livers, not only of man, but of almost every other class of animals. In mammalia, in birds, in reptiles, fishes, and molluscs, it has been found, without exception. The average quantity varies in different individuals, and in the same individual at different times. In man, the average per cent. is 1.79; in horses, it is as high as 4 per cent. The average in mammalia and birds is from $1\frac{1}{2}$ to 2 per cent. This saccharine substance is analogous, in its chemical character, to that of diabetes. The nature of the aliment does

not seem to exercise any very decided influence upon the amount of sugar produced by the liver. Dogs, whose food for six or eight weeks was exclusively animal, and birds of prey, who had never had anything but a purely animal diet, appear to have had as great an amount of sugar in the liver as those fed with a vegetable or mixed diet. It is proved by experiment that there is no trace of sugar in the blood of the portal vein before its entry into the liver; while, on the other hand, it is equally well proved that it appears in abundance in the hepatic veins, on their exit from the liver. Experience forces us to the conclusion, that sugar is formed in the liver in an original and independent way, without reference to the kind of aliment; and that the quantity does not vary with the kind of food. Nor is the liver a storehouse of sugar. Unlike mercury and arsenic, it is not accumulated, but is an evanescent and fugacious substance. It rapidly disappears when it ceases to be produced. It occurs in the liver before alimentation is possible, during the period of foetal life; and if it be objected that it is not produced in the foetal liver, but derived from the mother, the answer is, that it does not exist in the liver except at an advanced period of uterine life. In the human foetus it begins to appear about the sixth month, and increases with its age. That sugar does not accumulate in, but rapidly disappears from the liver, is proved by the experiment of cutting the pneumogastric nerves, which seem to give to the liver its glycogenic power. The sugar which existed in the liver before the operation, is found to disappear with great rapidity; and there being no further production of it, it ceases to be found. In acute diseases, sugar ceases to be produced. In cases of very sudden death, it is still found in the liver. In those in which death has had a more gradual approach, it will have entirely disappeared.

So much for the liver as a storehouse. Assuming that the liver secretes sugar, as we know it secretes bile, it may be asked, where is the duct through which the secretion flows? In reply to this, M. Bernard maintains the existence of internal secretions, which enter directly into the blood, without being poured out externally. Is this double secretion, asks M. Bernard, the result of double decomposition of the albuminous matter of the blood; the one being a hydro-carbon, and the other an azotized product? This is found not to be the case. Sugar is produced in greatest quantity when the intestinal digestion is in full activity; the bile is secreted in greatest quantity during the intervals of digestion. A curious phenomenon is observed in the *limax flavus*. During the period of digestion, a clear sweet fluid is poured into the stomach by the ductus choledochus; and towards the termination of the digestive process, this clear fluid is succeeded by one having the appearance of bile.

The quantity of sugar produced by the liver varies in different circumstances and at different times, like other secretions. In

the state of health, it is not found in the bile or other secretions of the body; it never leaves the circulation in the state of sugar. It remains in the organism. What then becomes of it? Where is it consumed? If produced, it must be consumed in some way; otherwise, there would be such an accumulation of sugar in the blood as to constitute diabetes, and the surplus would be thrown off by the kidneys.

The tenth and eleventh lectures are devoted to this subject, and the recently-published volume of "Guy's Hospital Reports" contains the article by Dr. Pavy, entitled "Researches on the Nature of the Normal Destruction of Sugar in the Animal System," which is placed at the head of this paper. The experiments of both authors are highly interesting and instructive. M. Bernard proves that sugars of the first species are indestructible in the blood. Of the sugars of the second species, the sugar of the liver is found to be the most destructible; the sugar of diabetes is next, glucose is third, and sugar of milk fourth, in its destructibility. Weak solutions of sugar injected into the blood disappear completely, while more concentrated solutions are not wholly destroyed, and a portion is eliminated by the kidneys. There is a limit to the destruction of sugar in respect of the quantity poured into the circulation. If a solution of sugar is rapidly injected into the circulation or the subcutaneous tissues, or if the solution is concentrated or impregnated with certain other salts, as marine salts, it is not likely to be destroyed, but will appear in the urine. While the digestive organs are in a state of repose, the whole of the sugar supplied by the liver is destroyed in the lungs; but when they are in full operation, the quantity becomes too great to be entirely destroyed in the respiratory process, and a portion passes into the general circulation. But this portion is usually so small, as to be insufficient to excite the kidneys to throw it off. When it increases beyond a certain limit, the person becomes diabetic, either continuously or in an intermittent manner.

There being no doubt that the process of the destruction of sugar takes place in the lungs, M. Bernard supposed at first that it was due to oxygen; but he abandons this theory from the results of experiments on the foetus. He found that sugar appeared in the liver of the foetal calf about the fourth month; and he expected that, as there could be no contact of oxygen with the lungs at that period of existence, sugar would be found in the urine. He did not find this to be the case. He found, moreover, that the quantity of oxygen introduced into the lungs does not increase in the same ratio with the quantity of carbonic acid that ought to be formed. Besides, he found that in blood *drown from the body* (our author here ceases to be physiological), there was no destruction of sugar by oxygen, carbonic, or any other gas; and that, in all cases, at the end of twenty-four hours it had dis-

appeared. Another theory is, that the destruction of sugar is effected in the economy by its combustion in contact with alkalis. The blood is always alkaline, and life is incompatible with an acid, or even neutral, state of the blood. The injection of lactic or any other acid into the blood speedily leads to death. But the alkalinity of the blood is so feeble as to be quite inadequate to account for the destruction of sugar, as it requires caustic potash to effect its decomposition. The last resource to which M. Bernard is driven, is the one which Dr. Pavy has announced in his recent paper on this subject. We can only give a very brief *resumé* of the results obtained by Dr. Pavy. He finds a striking difference in the quantity of sugar in the right ventricle, compared with that in the left. He finds that it is never entirely destroyed by the respiratory process, but that a portion passes into the systemic circulation, which in its course undergoes a gradual decomposition. In the blood returning by the veins from the head and the extremities, he still found a trace of sugar, while it entirely disappeared in the capillaries of the chylopoietic viscera. Having shown that the *principal* seat of the destruction of saccharine matter is in the capillaries of the pulmonary organs, and being attracted, like Bernard, by the theory of Liebig and the chemical physiologists, of the combustion of saccharine matter, and its decomposition, by the direct action of oxygen, into water and carbonic acid in the lungs, he directed his experiments in search of evidence for its support. But he found by the experiment of cutting off nearly the whole supply of oxygen to the lungs, and making an animal respire hydrogen until death was nearly produced, that there must be some other agent at work to account for the destruction of the sugar—that oxygen alone was not adequate to the task. He required to push his investigations farther; and by experiment he found, that

"If right ventricular blood, or blood containing animal sugar, be made to traverse the capillaries of dead lungs inflated with air, immediately on its removal from the animal, and before coagulation has taken place, the sugar is as much destroyed as if it had passed through the pulmonary capillaries of the living animal; whilst if, on the contrary, the fibrine have separated by spontaneous coagulation, and the serum and corpuscles alone be employed, not the slightest disappearance of sugar is in this case to be observed."

He found that it is only in *living blood*—blood before its spontaneous coagulation has taken place—that oxygen is capable of effecting the metamorphosis or destruction of sugar; that immediately the last act of vitality has been performed, or that its fibrine has undergone spontaneous separation, the sugar ceases to be subjected to the influence of oxygen, until *incipient decomposition of the blood has set in*. Saccharine matter out of the animal economy has very little susceptibility of direct oxidation, but is exceedingly liable to metamorphosis when brought into contact with an azotized substance, whose particles are in a state

of change. It is inferred that fibrine plays a principal part in the molecular metamorphosis of animal sugar in the system, and it is found, that though the greater part of the process is effected in the pulmonary capillaries, it is continued to some extent in the systemic circulation, and with considerable vigour in the chylopoietic viscera. The process Dr. Pavy considers to be analogous to fermentation. He seems to incline to the belief that the lactic acid fermentation takes place, but he has not hitherto been able to discover lactic acid in the arterial blood. Indeed, if Bernard's view, that an acid state of the blood is inconsistent with life, and that the injection of lactic or other acids into the circulation produces death, be true—and it is confirmed by an experiment of injecting phosphoric acid, which caused the death of the animal—it might be presumed to be unlikely that such a substance would be found in the arterial system. On the other hand, we find that lactic acid is produced in great quantity in the animal economy; and that it must either exist in that form in the blood, or, if its presence is really inconsistent with life, in such a state as to be readily transformed into its normal condition, appearing as it does in the stomach and the muscles as a constituent of gastric juice and the juice of flesh. Whether the lactic acid theory be the correct one or not, in the present state of our knowledge it is certainly the most feasible; and it is pretty well established, that the theory of Liebig cannot stand the test of experimental physiology.

Dr. Pavy, in applying the results of his experiments to the elucidation of the nature of diabetes mellitus, hazards the opinion, that there is a modification of sugar produced by the liver, which is not susceptible of undergoing the normal process of destruction or metamorphosis in the animal system—that diabetic sugar bears a resemblance, in its physiological relations, to vegetable rather than to animal glucose. He is at present experimenting on this point, and hopes to arrive at more definite conclusions concerning this long-vexed pathological question.

To return to M. Bernard. Our limits will not permit us to notice many points of great interest and importance in these lectures, which we would recommend to every one who proposes to devote his attention to experimental physiology, not merely on account of the amount of valuable information which they contain, but chiefly as a practical guide in making physiological experiments. He clearly points out the great difficulties with which they are surrounded, and he urges the necessity of unceasing vigilance to guard against errors. He does not lay down abstract rules for the guidance of others, but he practically demonstrates them in his experiments. He teaches by example, rather than by precept.

We will merely indicate, briefly, the subject of the lectures to which we have not hitherto alluded, and conclude with a

notice of his application of these physiological researches to the pathology of diabetes. We went rather ahead of our author in discussing the question of the destruction of sugar, before he had told us one half of what he had to say about its production. We retrace our steps to the fifth lecture. He shows that there are oscillations of the glycogenic function of the liver according as the quantity of blood which traverses the organ is great or small. It reaches its highest point when digestion is most active, and falls to its lowest when it is least active. This oscillation is observed both in the healthy and in the diabetic state. In his experiments to prove this point, our author finds it necessary to draw blood from various parts of the body, and among others from the right auricle. In relating the method by which he proposes to effect this latter purpose, he rather startles the sensibility of his readers by describing what he calls "*une sorte de cathétérisme cardiaque,*" and depicts the "*sonde en métal,*" which he proposes to use.

In the sixth lecture, he shows that the destruction as well as the production of sugar is a fact common to the vegetable and the animal kingdom. He points out the circumstances which modify the secretion of sugar, such as alterations in the substance of the liver, cysts, cancer, and fatty degeneration. He describes the various influences which affect it, such as abstinence, the state of hybernation, and the various kinds of alimentation, such as the fatty, the nitrogenized, and the feculent and saccharine. He finds that the last does not increase the quantity of sugar in the liver; that nitrogenous and saccharine aliments produce nearly equal results, while the first has no effect whatever. Fatty matters do not pass directly through the liver; they are absorbed by the lacteals, and reach the lungs without coming in contact with the liver at all. In alimentation of this kind, therefore, the animal is in the same state, in so far as regards the liver, as if no food were given.

In the seventh lecture M. Bernard shows that the sugar supplied in the food does not pass unchanged into the circulation; that it is changed by the liver into a milky, chyle-like substance. It has been supposed that this milky fluid was due to the introduction of fatty matters, but it is found in animals fed exclusively on feculent substances. A portion of this and the eighth lecture is employed in describing the anatomical characters of the liver. He then proceeds to describe the influence of diseases on the secretion of sugar. Diseases, whether acute or chronic, more particularly febrile diseases, are found to destroy this function. Acute diseases produce a like effect in cases of diabetes. The influence of temperature is found to be remarkable. The sugar diminishes as the temperature is lowered, till at 18 to 20 degrees cent. it disappears altogether; when it rises to 34, the sugar begins to reappear. The influence of age and sex have not been

found to exercise any remarkable effect. The ninth lecture contains a comparative examination of the blood of the portal vein and of that of the hepatic veins. It is found that the red globules are reduced in size by their passage through the liver. The amount of serum and clot are in an inverse ratio in the blood before it enters and after it leaves the liver. According to the observations of Lehmann, the serum in the portal vein is more than double that of the hepatic veins, while the clot of the portal vein is much less than that of the hepatic veins. The quantity of water is less in the hepatic veins than in the portal vein, while of solid matters that which is contained both in the serum and clot of the hepatic veins is greater than that in the portal vein. In respect to fat, it is diminished one-half in its passage through the liver. The action of the liver on the fibrine is extremely remarkable. The experiments of Lehmann showed that, though present in considerable quantity in the portal vein, it is entirely lost in its passage through the liver. The blood of the hepatic veins is found to coagulate though they contain no fibrine; so that the coagulation does not entirely depend on the fibrine which it contains. Albumen is found in both veins, though diminished in quantity in the hepatic. In respect to temperature, it is found to be considerably higher in the hepatic veins than in the portal vein, being $39^{\circ} 80'$ in the former and $39^{\circ} 40'$ in the latter. The point of highest temperature in the whole organism is found to be at the place where the hepatic veins discharge themselves into the vena cava.

The twelfth lecture is devoted to the examination of the uses of sugar in the animal economy. It was supposed that its principal object was fulfilled in the production of animal heat. Bernard thinks that it has other and more important uses—that it is an essential element in the production of organic cells by processes of fermentation or molecular change. He found that sugar exists exclusively in the lungs and the muscles of the foetus, and that two kinds of fermentation take place in these tissues—one a production of sugar at the expense of a pre-existing azotized insoluble matter, and the other the production of lactic acid at the expense of the sugar.

The thirteenth and fourteenth lectures are recapitulatory and critical.

In the fifteenth lecture the influence of the nervous system upon the secretion of the liver is discussed. Its effects are of three kinds—1st, an exaggeration; 2nd, a diminution or extinction; and 3rd, a modification of the sugar secreted by the liver. The first is produced by exciting mechanically, or by galvanism, that part of the medulla oblongata which is contained in the interval between the roots of the auditory nerves and those of the pneumogastric. This gives rise to a kind of artificial diabetes—for the sugar is produced in such abundance as to be

eliminated by the kidneys. It may be here remarked, that M. Bernard is not rigidly systematic in his lectures. We ought not to be surprised at the erratic course which he takes, as he gave us due warning at the outset. Accordingly, at this part of his lecture he suddenly leaves the subject of the influence of the nervous system, to tell us that he has made a great number of experiments, and found that there is a species of election in the excretion of the matters eliminated from the system. In respect to sugar, he finds that it is excreted only in two ways, one by the kidney, and the other by the stomach. Its excretion by the kidney had been long known, and that by the stomach had already been established by Dr. Macgregor, in a series of careful and exact experiments. By the way, the only allusion which our author makes to Dr. Macgregor is at page 430, when he calls in question, on the authority of Lehmann, the statement of Macgregor, that the quantity of urea excreted in diabetes is greater than in the normal state.

In the sixteenth lecture he announces the remarkable fact, that sugar is always present, normally, in the cerebro-spinal fluid, and that it comes from the liver, as it appears or disappears in that fluid according as the liver produces, or does not produce it. He also states that concussion of the brain is apt to render persons diabetic. He also finds that sugar is present in the lymphatic fluids, and in the chyle of the thoracic duct. At the end of his lecture, he returns to the subject of the influence of the nervous system. He finds that it is not direct, but reflex. The pneumogastric nerve, he thinks, carries the impression to the nervous centre, which is reflected through the spinal cord, and conveyed by filaments of the sympathetic ganglia to the liver. The excitation produced by the incessant action of the air on the lungs, transmitted to the nervous centre by the pneumogastric nerve, he considers to be the cause, by reflex action, of determining the secretion of sugar by the liver. If the pneumogastric nerve is cut in the cervical region, the production of sugar in the liver is completely stopped, while, on the other hand, if it is cut between the liver and the lung, the secretion is not interfered with. It will therefore be seen, that mechanical irritation of the medulla oblongata is conveyed through the spinal cord and sympathetic filaments. The rôle of the pneumogastric is, consequently, that of an afferent nerve. Mechanical irritation of the medulla oblongata is found to be only temporary in its effects. The diabetes thus artificially produced only lasts for a few days. The result of cutting the pneumogastric nerves is, great excitement in the abdominal circulation. Great and more permanent activity of the circulation of organs is produced by the division of the sympathetic filaments which enter them.

In the eighteenth lecture, it is maintained that polyuria is not always a concomitant of glycosuria. There are diabetics who

pass only the normal quantity of urine. The irritation of the medulla oblongata produces not only increased action of the liver, but also of the kidneys. Artificial diabetes is produced by the introduction of certain substances into the system as well as by mechanical means. By destroying the relative functions by annihilating voluntary motion and sensibility, the purely nutritive functions are not only preserved but increased in activity. The *woorara* or *curare* poison, when introduced into the subcutaneous cellular tissue, has the effect of destroying the relative functions of life, and of completely paralyzing the cerebro-spinal system. Respiration, depending as it does on the cerebro-spinal system, is also annihilated, and requires to be maintained artificially; meanwhile all the secretions are to be found in a state of abnormal activity, and among the rest that of the production of sugar. Injuries of the head produce like results in the same way. Direct excitation of the liver, by the injection of irritant substances or by injury, also produces a similar effect. Having seen how the glycogenic function is exaggerated and altogether annihilated, it remains to be shown how it is perverted, or the nature of the secretion changed. This is effected by section of the spinal marrow. If the section is performed below the part where the brachial nerves are given off, the secretion of sugar is altogether arrested; but if the section is performed somewhat higher, between the origin of the brachial and diaphragmatic nerves, although at first no sugar can be detected in the hepatic tissue, after exposure to the air for five or six hours, it is found to be charged with saccharine matter. It would appear, therefore, that the latter operation arrested the process of transformation of the substance from which the sugar is elaborated before it was completed. This substance is an albuminous compound, which, by a process analogous to fermentation, is converted into sugar. By experiments on the muscles and lungs of the foetus, M. Bernard found that they contained an insoluble albuminous substance which, by exposure to the air, was rapidly converted into lactic acid, and which, by adopting necessary precautions to arrest the rapid process of fermentation which takes place, was first converted into sugar. The experiments of Lehmann confirm this view.

Having thus, at some length, analysed Bernard's views on the subject of the production of sugar in the animal economy, we will briefly glance at the bearing which they have on the pathology of diabetes. Comparative pathology does not throw any light on the subject. There is no such disease as diabetes found among the lower animals, and when produced artificially it is only of temporary duration. What, then, is the organ which is the seat of this disease?

This question has received very various answers. Some have placed it in the kidneys, some in the stomach, and some in the

blood. Bernard, as may readily be supposed, places it in the liver. Pathological appearances are apt to be very deceptive in this as in many other diseases—alteration of structure in organs is too often and too readily accepted as conclusive evidence that the seat of disease is primarily in such organs. The kidneys in diabetic patients will generally be found hypertrophied, more especially if they die suddenly. This is also the case in simple polyuria, while in those cases of diabetes in which the quantity of urine is not augmented, the kidneys are unaltered. The coats of the stomach have been observed to be hypertrophied without organic alteration, and the villi of the mucous membrane are more visible than ordinary; but these appearances depend upon the great activity of the digestive organs in diabetic patients. The theory of the acidity or neutral state of the blood preventing the destruction of the sugar in the system, has no foundation in fact. The liver, being considered by Bernard to be the seat of the disease, is found to be augmented in volume, and to contain a large proportion of sugar. The amount of sugar in proportion to the mass of the liver is found to be double. This is only the case when a patient dies suddenly. If the death is gradual, as is usually the case, the diabetes disappears before that event, and there is no sugar found in the liver, and no hypertrophy. Sugar is found in great quantity in the blood of diabetics, but in none of the tissues except that of the liver. In post-mortem examinations made 24 or 36 hours after death, sugar will be found in all the organs and in all the tissues; but this is proved to be a purely cadaveric phenomenon, resulting from endoemosis. Where is the lesion which produces this exaggeration of the function? It may be either internal or external to the liver; it may be in the tissue itself, or conveyed from without by reflex nervous influence. Irritation of the lungs can produce diabetes just in the same way as the application of galvanism to the pneumogastric nerves produces it. When the pneumogastric is cut in the neck, irritation of the lungs produces no effect, the communication with the liver being interrupted. The fact that diabetics almost always die of phthisis, entitles the connection between the liver and the lungs, in reference to the production of sugar, to receive the careful attention of pathological inquirers. Whether is the liver or the lung the first organ affected in diabetes? On the other hand, it may depend on lesion of the nervous centres. The organic functions may be deranged by nervous influence as well as the functions of relation, as in epilepsy, chorea, &c. Bernard describes various kinds of diabetes; the intermittent, the acute, the alternating, the periodic, and the continued. The last is the most common and most formidable kind. One of the most remarkable symptoms of this disease is the exaggeration of the digestive functions. It is analogous in this respect to *tabes mesenterica*, as well as in the

fact that this activity of digestion is accompanied by emaciation and uneasiness. The most characteristic symptom is the presence of a kind of sugar analogous to glucose, in considerable quantity in the urine, and that not in a temporary or accidental manner. In all cases, the quantity of sugar is greatest at the time when digestion is in full activity.

Macgregor maintains that the quantity of urea is increased in diabetic patients; Lehmann, that it is diminished. Albumen is found in the latter stages of diabetes, and is a most unfavourable symptom. The reaction of diabetic urine is generally acid. The quantity of urine voided is very variable. In some cases it is quite normal, while in others, when the symptom of polydipsia is present, it may be enormous. The quantity excreted is in strict relation to that of the fluid injeſta. Various nervous affections have been obſerved to accompany diabetes, ſuch as diſorders of ſenſibility of motion and intelligence, of the internal and of the genital organs. The ſight has alſo been affected. Why is it that diabetic patients become emaciated when the digeſtive and nutritive functions are preternaturally excited? The ſugar, as has been ſhown, is formed at the expenſe of the albuminous products of digeſtion, and the blood is impoverished in proportion to the amount of ſugar excreted. Hence the practice, ſince the time of Rollo, who originated it, to give azotized ſubſtances to diabetic patients. Vegetable ſubſtances excite both the activity of the liver and the kidneys more than animal matter. Graminivorous animals paſs more urine than the carnivorous; there is, therefore, this advantage in giving animal nutriment to diabetic patients, that the activity of the kidney is thereby diminished. If the digeſtive functions are greatly impaired by febrile diſeaſe, or by energetic treatment, the diabetes diſappears, but it returns in all its intensity when theſe diſturbſng cauſes are removed. There are medicines which remove the diſeaſe for a ſhort period, but as the ſyſtem begins to be tolerant of ſuch medicines, they ceaſe to have any beneficial effect.

There is no diſcovery, however valuable, ever promulgated, which does not provoke a hoſt of objectors and antagoniſts. The cauſe of truth is undoubtedly thereby greatly ſerved, and quackery and charlatany receive merited reproof. The frequently exaggerated claims of diſcoverers are alſo reduced to their proper level, and ſtripped of their borrowed or ſtolen plumes; but it is neceſſary, in order that ſuch good ends may be ſerved, that the oppoſents of any new doctrine or diſcovery be better informed than the perſon who proclaims them. In the caſe in hand, it ſo happens that all the objectors to the doctrines of M. Bernard are infinitely beneath him in their experimental acquaintance with the ſubject which he ſo ably handles, while the moſt ſkilful phyſiological chemiſts, at the

head of whom is M. Lehmann, corroborate many of the discoveries which have rendered his name illustrious. M. Schmidt, agreeing with Bernard in all points except that of the glycogenic function of the liver, labours to show, upon purely theoretical grounds, that sugar is developed in the blood without the intervention of the liver; but he can produce no good experiments either to substantiate his own views or to invalidate those of Bernard. His objections, therefore, fall to the ground, and are utterly unworthy of notice.

The first direct attack on the discoveries of M. Bernard was made on the 2nd of February last, before the Academy of Sciences of Paris. The gist of it was, that the beef and mutton which Bernard used as purely animal nutriment contained sugar. This was an objection which Bernard had especially guarded against, and is altogether worthless. On the 9th of the same month another antagonist appeared on the arena of the Academy, whose objections were directed against the reagent employed by Bernard—viz., the copper and potash test. He attempts to invalidate this test on the ground that the presence of albumen has a disturbing effect which is destructive of its value. But the objector altogether forgets that M. Bernard obviates this objection completely, by the precaution of removing albuminous matters by filtration through animal charcoal. Besides, the copper and potash test is not depended upon as in itself absolutely conclusive. The decisive character is in all cases fermentation, which M. Bernard has religiously adhered to in the course of his experiments.

In concluding these remarks, there are few, we think, who will withhold the tribute of their admiration of the boldness and originality of many of M. Bernard's views, and of the untiring perseverance and skill with which he has pursued his researches; and though some may not be disposed to coincide with him in all the points which he has advanced, we are certain that there is no one who will be more ready than M. Bernard himself to give them up, when competent persons have proved, by experiment, that they are wrong. At present the best evidence is all in their favour, and till that is shaken by more powerful testimony, we will rest content to give them that reception which the candour and ability of their author entitles them to.

- II. *Report of the Committee for Scientific Inquiries in relation to the Cholera Epidemic of 1854. Presented to both Houses of Parliament by command of her Majesty.* London. 1855. Pp. 129. Appendix to Report, &c. Pp. 352.
- Letter of the President of the Board of Health to Viscount Palmerston, accompanying a Report from Dr. Sutherland on Epidemic Cholera in the Metropolis in 1854.* Pp. 130.
- Report of the Medical Council.*
- Results of Treatment of Asiatic Cholera.*

It is unfortunate, although perhaps natural, that the interest of the great majority of the medical profession in the subject of Cholera ceases with the disappearance of the disease. And yet it is unquestionably the duty of the practitioner to make himself acquainted with every circumstance calculated to throw light upon the origin, nature, and propagation of this fatal malady.

It will be in the recollection of our readers, that on the accession of Sir B. Hall to the Presidency of the Board of Health, cholera being then prevalent, he formed a Medical Council to aid him in taking the necessary steps to collect information relative to the disease. The Council, to facilitate business, subdivided themselves into three committees;—one for Scientific Inquiries, another to consider the Treatment, while on a third devolved the duty of carrying on Foreign Correspondence on the subject. We have now before us the results of the labours of the first two of these committees, and we have no hesitation in saying that few more interesting or more valuable Blue Books have ever been presented to Parliament.

From the Report of the Committee for Scientific Inquiries, we shall endeavour to cull some of the more striking points.

The objects held in view in commencing their investigations were threefold. First, to form a descriptive history of cholera, by having recourse to the general statistics of the epidemic of 1854, including the localities where it chiefly prevailed; the influence of age, sex, and employment in favouring it, and its own pathological stages and periods. Secondly, to arrive, if possible, at precise knowledge of the causes of the disease, by studiously observing the air and water in infected districts. And thirdly, to increase the resources of medical treatment by comparative records of various therapeutical experience.

The statistics of the disease were compiled from the returns in the General Register Office, and the answers obtained to certain circular forms issued to the profession. It is matter, we think, of deep regret, that only 300 practitioners furnished the Council with the desired information. Their reports included 4,271 cases of cholera, and 20,301 of diarrhœa.

The Report details the progress and fatality of the epidemic:—

"The summer of 1853 witnessed its commencement. At that time, as the temperature rose in July, diarrhœa, as well as the common form of cholera, became fatal in London, and a few deaths from cholera in the Asiatic form were registered in August in the two districts by the side of the river. Several deaths by the disease occurred in September; and in October, while the temperature fell, and diarrhœa decreased from 723 in August to 283 in October, the cholera spread and became more fatal, so that the deaths by cholera were 335 in October and 288 in November. On the last day of October, 25 persons died of the disease; but subsequently the epidemic subsided, so that towards the close of November the deaths did not exceed four daily; in the month of December the deaths were 43; in January (1854), one death only happened at intervals on each of seven days; one death was recorded on the 10th of February, one on the 25th, and one on the 26th; no death by cholera occurred in March; only four in April, four in May, and three in June. Diarrhœa, however, although it had declined, never ceased. No day in the six first months of the year was without a death, and on some days as many as eight, ten, and twelve deaths by this form of disease were recorded; but it exhibited no disposition to increase. Yet, warned by the course of the former outbreaks, fears were entertained of the more formidable secondary visitation; which were unfortunately justified by the event, for in the eleven days after July 4th, ten persons died of cholera; on the 16th, four died of the disease; and the deaths ran up towards the end of the month, until 53, 41, and 44 died on the last three days. On August 1st, 72 persons died of cholera; which continually spreading and multiplying in its course, the deaths on the last day of August were 211. The deaths in July had been 371 by diarrhœa, 308 by cholera; in the month of August, the deaths by diarrhœa amounted to 1,022, by cholera to 3,513. No abatement was observed, but the epidemic raged more violently, and the deaths by cholera alone, on the 1st of September, were 389; on the 2nd, 459; on the 3rd, 329; or 1,177 in the three days, besides 126 deaths by diarrhœa. The eruption had now reached its culminating point; but it subsided slowly, for 4,371 lives were destroyed by cholera and diarrhœa in the first fourteen days of September, while in the month the deaths by cholera were 6,084, by diarrhœa 990. The epidemic declined rapidly in October, and the deaths fell from 70 by cholera on the first day, to 3 on the thirtieth day, making 823 in the aggregate, besides 426 by diarrhœa. In November the deaths by cholera were 52; in December, 5—namely, one on the 2nd day, one on the 5th, one on the 6th, and two on the 22nd day. The deaths by diarrhœa in the two months were 175 and 113. The plague was stayed, but it had destroyed in one or other of its forms 17,000 people." Pp. 7, 8.

The estimated number of persons attacked by cholera in London was 25,000. The mortality of cases treated in hospital was 51 per cent. ; of those treated at home, 42 per cent.

The density of population does not seem to have exercised any decisive influence on the intensity of the operation of the disease.

In Scotland, we find that the mortality among persons attacked by cholera was 47.5 in 100. Out of 14,430 cases, 6,848 terminated fatally. In England, the proportion of deaths was 45.2 per cent. Of 142,351 persons attacked by diarrhoea, 129,839 recovered ; 10,000 of the cases became cholera, 6,760 fell into collapse.

The duration of 3,600 cases of cholera, dating from the first characteristic symptoms of real cholera, was nearly six days. The duration of 1,744 fatal cases was 2.68 days, while the duration of 1,856 cases of recovery was 9.06 days. The influence of age on the mortality is striking : at the age of 15—25, 34.9 per cent. die ; at the age of 25—35, 35.4 per cent. ; at 65—75, the deaths to 100 cases are 58.2. The mortality among the male population was at the rate of 47, among the female population at the rate of 45 in 10,000.

The second section of the Report before us refers to the *Ætiology* of the disease. Reports were received by the Medical Council from Mr. Glaisher of Greenwich, on the meteorology of London ; from Dr. R. D. Thomson, and from Mr. Rainey of St. Thomas' Hospital, on certain chemical and microscopical investigations of air ; and from officers of the Board of Health, on the sanitary inspection of particular districts in the metropolis. While the Report to which we are at present referring furnishes us, in a condensed form, with the results of these different observations, the Board of Health has, in a most commendable spirit, published, in an Appendix, the full reports made by these gentlemen. This Appendix is a bulky volume of 352 pages, and contains a mass of the most valuable information, illustrated by plates and tables. As we may not again have an opportunity of alluding to it, we would especially call the attention of our readers to the microscopic drawings, which are most faithful and beautiful representations.

Mr. Glaisher, in his elaborate report, institutes a comparison of the meteorological phenomena which characterized the three epidemics of 1832, 1849, and 1854. He says, "The three epidemics were attended with a particular state of atmosphere, characterized by a prevalent mist, thin in high places, dense in low. During the height of the epidemic, in all cases, the reading of the barometer was remarkably high, the atmosphere thick ; and in 1849 and 1854 the temperature above its average. A total absence of rain, and a stillness of air amounting almost to calm, accompanied the progress of the disease on each occasion. In places near the river the night temperatures were high, with

small diurnal range, with a dense torpid mist, and air charged with the many impurities arising from the exhalations of the Thames and adjoining marshes; a deficiency of electricity, and, as shown in 1854, a total absence of ozone, most probably destroyed by the decomposition of the organic matter with which the air in these situations is so strongly charged. In both 1849 and 1854, the first decline of the disease was marked by a decrease in the readings of the barometer, and in the temperature of air and water: the air which previously had for a long time continued calm, was succeeded by a strong S.W. wind, which soon dissipated the former stagnant and poisonous atmosphere. In both periods, at the end of September, the temperature of the Thames fell below 60°; but in 1854 the barometer again increased, the air became again stagnant, and the decline of the disease was considerably checked. It continued, however, gradually to subside, although the months of November and December were nearly as misty as that of September. By the close of the year diarrhoea and cholera had subsided, but a high rate of mortality still continued." Pp. 30, 31.

The general results founded on Mr. Glaisher's inquiry are the establishment of two facts:—1st, That in the years of cholera epidemic, there are marked meteorological characters which render the season defective in those atmospheric changes which renew the purity of the air; and 2nd, that these characters are largely developed in the low levels of London, where cholera has been most prevalent and fatal.

The examinations of the atmosphere, chemical and microscopical, conducted by Dr. Thomson and Mr. Rainey, give interesting results. It appears that, in the atmosphere of a cholera ward, there were found diffused two classes of substances: some not possessed of life, others having distinctly life, growing and moving. According to Mr. Rainey, they had the appearance of small flocculent masses, visible to the naked eye; and examined by Dr. Thomson and himself, they were found to consist of the mycelia of fungi, apparently in an active state of vegetation, mixed up with the dusty impurities of an inhabited room. No difference could be detected between these growths and the mycelia of fungi formed in vegetable solutions, when exposed to the air where there was no cholera. In addition to these fungi there were extremely minute, colourless, indistinctly-bearded fibres (resembling in their general character that form of vibronia called *bacterium*), so abundant as to cover some of the branching fibres of the mycelium. These are not found on mycelia in vegetable solutions, and contain organic matter. In a ward only partially filled with cholera patients, the disease being on the decline, these fibres were less numerous; and on an examination made after cholera had disappeared from St. Thomas' Hospital, and the ward was empty, they could not be detected.

In the external atmosphere no vibriones were observed. In air collected from a sewer during twenty-seven days, beginning 22nd November, vibriones were seen in very large quantity, and also fungi. The water through which sewer-gas had passed was strongly alkaline with ammonia, the result of organic decomposition; while the other specimens were strongly acid, owing to the presence of products of combustion.

The Report very properly observes, that these results are as yet only of negative interest.

The reports of the Sanitary Inspectors appointed to visit infected localities, furnish valuable information. All agree that in those districts where cholera had become localized, they found it connected with obvious removable causes—such as open ditches, tidal ditches, badly-constructed sewers, and, still worse, house drains, imperfect ventilation, the non-removal of house refuse, the effluvia of filthy stables, cow-yards, and pig-sties. In reference to the water supply of London, there is the evidence of Drs. Thomson and Hassall. The admixture of decomposing organic matter with the water of the metropolis is held, and justly, to have exercised a great influence on the spread of cholera among the population.

The third section of the Report is devoted to what is termed the Practical Pathology of the disease. Circulars containing queries relative to this were distributed among the profession, and from the answers the committee have deduced the grounds of their report. But the information acquired in this way, although interesting and worthy of attention, is not sufficiently definite, or founded on sufficiently large experience to be of much practical utility. The same may be said of the results of the treatment, which, as far as they go, are very fully given and admirably arranged.

We close our notice of these reports, warmly recommending them to the careful study of our readers.

III. *A Treatise on the Structure and Use of the Spleen, being one of three unsuccessful Essays for the Astley Cooper Prize, awarded July, 1853. With Additional Notes, and an Appendix, containing an Exposé of the numerous Errors in the Prize Essay.* By EDWARDS CRISP, M.D., &c. &c. Pp. 174, and Appendix, pp. 24. London: H. Teape & Son.

It appears that the Astley Cooper Prize for the best Essay on the Structure and Use of the Spleen, was awarded, in 1853, to Henry Grey, Esq., F.R.S., and Dr. Crisp, having been an unsuccessful candidate, has published his Essay, in order that the public and the profession may judge, whether or not the persons

appointed to make the award have exercised their vocation impartially, in preferring the essay of Mr. Grey to that of Dr. Crisp.

The present Treatise is a most elaborate production, exhibiting very great research, and extraordinary industry and labour on the part of the author. And we have no hesitation in saying, that if his paper did not deserve the Astley Cooper Prize, his zeal, great exertion, and industry in elucidating the subject of the structure and use of the spleen, well deserve the best thanks of the profession. The Essay extends to 174 closely printed pages, and an Appendix of 24 pages, containing an exposure of the errors of the successful Essay; and when it is considered that no fewer than 243 preparations and many drawings of the spleen were made by the author and given in with the Essay, it may be admitted that his labour has been very great.

As he properly considered that the conditions of the prize required that the Essays should contain *original* experiments and observations, which had not been previously published, he took especial care to comply with these conditions, and accordingly he states—"That every drawing, every injection, and wet and dry preparation, microscopical or otherwise, has been made by the author. That every *post-mortem* examination of man and of the lower animals has been performed by the author, who has weighed the organs himself, and in no instance has he depended upon the testimony of another. That every coloured drawing taken by the author has been from the recent parts, and by rule and compass. That the object in these sketches has been to give the colour and shape of the organs, and often to show the spleen in connection (contrast) with the other viscera. That the microscopic drawings (especially of the blood corpuscles) were at first taken with the steel disc, but that latterly the author, from constant practice, has dispensed with this mode of delineation." P. 11.

The subjects discussed are indeed very numerous. After an Anatomical and Physiological Proem, in which the author takes a glance at the various orders of the vertebrate and intervertebrate animals, in so far as peculiarities in structure and function may bear upon his subject, he enters upon the structure and anatomy of the spleen, observing that "there is no organ in the body, excepting, perhaps, the placenta, that bears any resemblance to the spleen; no organ differs so much in size, in weight, in shape, colour, smell, consistence, and situation; and although so much discrepancy of opinion exists respecting its office, it is, I believe, *the only one of the abdominal viscera that, on a superficial examination, reveals a part of its function.* The office of the liver, the kidney, and pancreas, if those parts were examined alone, could never be guessed at; but the peculiar elasticity of this organ (the spleen), the absence of an excretory duct, the size of its blood-vessels, and the beautiful arrangement of the valves

of the splenic vein in some animals, might, I think, lead to the inference, if the inspection were only superficial, that one of the uses of this body is that of a reservoir or receptacle for the blood." P. 33.

The structure of the spleen, its size in foetal life, infancy, childhood, and manhood, its weight in health and disease, its comparative anatomy in all the species and varieties of animals, are detailed with great minuteness; and the examples given to illustrate the subject are very numerous. Separate paragraphs are also devoted to the development of the spleen, the effect produced upon it by medicines and poisons, and also the results on animals arising from extirpation of the organ.

The pathology of the spleen, illustrating its physiology, embracing the organ in man, and also in the lower animals, contains much that may be read with advantage, and is perhaps the most interesting part of the Essay. To this part of the subject the author devotes considerable space, believing that the uses of this organ may be more correctly deduced from the effects of disease, than from observation or experiments upon animals in a state of health. He says on this head:—

"Another great omission, I think, in previous inquiries, has been the neglect of pathology and morbid anatomy, as a means of elucidating the physiology of this organ; and I believe that no separate works exist at present on the Pathology and Morbid Anatomy of the Spleen, notwithstanding the important bearings its abnormal conditions have on the functions of the body. Rokitansky, Andral, Cruveilhier, Piorry, Twining, Bree, Bright, and many others, have written upon the diseases of the spleen, but their inquiries have been confined entirely to human pathology, and the diseases of the lower animals have been altogether neglected; indeed, even among veterinary works, I am unable to find one which treats upon the disorders and diseases of the spleen; so much has this department of pathology been neglected. It is true that facts of great interest and importance are scattered about in various journals, but no one (so far as I know) has yet attempted to collect these, and to draw physiological deductions from them. Nearly all the important discoveries in physiology have been made by experiments upon living animals in a state of health, but why should not their diseased conditions be turned to account? Why may not brute pathology hereafter clear up some of the doubts and difficulties of our art? The examination of one of the lower animals that has been kept in confinement, is attended with these great advantages. The exact nature of the food, and the deviations from the natural state of the animal, can be readily ascertained, and if the animal is small (a bird, *e. g.*), all the morbid parts are revealed at once, and the chain of causes more apparent than in larger animals; the investigator always taking into account the peculiarities of structure of the animal.

"Pathology has thrown much light upon some of the functions of the human body; many lesions of the brain and nervous system tend to reveal the office of these parts; and not unfrequently the examination of morbid structures has elucidated their physiology. If the diseases of the spleen, according to the present state of our knowledge, do not show clearly its office, they at any rate convince us that many of the theories respecting its use are based upon assumption, and not upon evidence obtained by the scalpel and the microscope." P. 14, 15.

Dr. Crisp appears to have made many experiments to ascertain

the effects of medicines and poisons upon the spleen. He states on these points:—

"One of the most interesting and practical questions is, as to the effect of certain medicines upon the size of the spleen. I have seen M. Piorry, of Paris, give quinine and salt to several patients, percussing the spleen before the dose, and coming to the conclusion, by careful percussion afterwards, that the spleen was diminished in size almost instantly by the medicine. The solidity was certainly less (as I thought) after the quinine or salt; but I attributed the change to the generation of gas by the agent administered. The subjects, six of them were soldiers who had served in Africa, and whose spleens were probably hard and indurated to such an extent as to defy the power of any medicine, admitting even that it had a specific action upon the organ. I have made various experiments with quinine, and have come to the conclusion that it exerts no *immediate* influence upon the spleen.

"Four rats were fed by me upon quinine, sugar, and cheese only, for a week, and when killed, their spleens were compared with four healthy rats of the same size. No difference was perceptible in the spleens, either by the naked eye or by the microscope."

"It has been asserted that morphia, opium, and other drugs, exert a powerful influence upon the spleen. I took 30 mice of the same size and weight, and poisoned 5 with opium, 5 with camphor, 5 with prussic acid, 5 with chloroform, and 5 with tartarized antimony; and I examined them side by side with healthy mice killed at the same time by violence. Those killed by chloroform had darker spleens. The others were not altered. I poisoned three sparrows in July last, with the virus of the rattlesnake. I compared the spleen-blood with that of three other sparrows I killed by violence. No difference could be perceived." P. 135, 136.

Of the effects of many experiments on extirpation of the spleen in the lower animals, the following conclusions are deduced:—

"1st, That the operation for the removal of the spleen is one generally attended with some danger to the life of the animal from the effects of peritonitis.

"2nd, That the assumption that the lymphatic glands, the thymus, thyroid, and supra-renal capsules (all or any of them) perform the office of the spleen when this organ is removed, is one not founded on careful reasoning and experiment.

"3d, That when the glands in the neighbourhood of the spleen are enlarged after the operation, the enlargement is probably a consequence of the irritation of the wound, and not the result of compensatory action.

"4th, That animals, as stated by Shultz, whose spleens are removed, are more active and run faster than those which have the organ entire.

"5th, That the functions of the body (as far as can be ascertained) are well and perfectly performed after the removal of the organ.

"6th, That neither in the blood, nor in the parts formed by it, can any abnormal change be detected as a consequence of the operation." P. 145, 146.

From the whole of the author's researches and experiments, containing, we believe, much original matter, the following general conclusions are come to in regard to the whole subject:—

"Seeing that the spleen can be removed with impunity in some animals, and after its removal all the functions of the body may be (as far as we can judge) as well performed as before, it is fair to conclude that it is an organ comparatively of little importance in the animal economy.

" That the assertion of Blumenbach, Monro, and other anatomists, that the spleen decreases in size from man to the fish, is founded in error; for the spleen of many fishes, so far from being smaller, is larger than in any other animal.

" That the statement by most writers, respecting the comparative size of the spleen and pancreas in birds, does not apply to all the genera.

" That judging from the use of the microscope, the application of galvanism, and physical elasticity, no part of the spleen possesses any muscular fibres.

" That taking into account the large amount of elastic tissue in the spleen—its capability of distension—its resumption of its former size—the valvular arrangement of the mouth of the veins, and its network of trabecular tissue, which is so placed as to assist, under certain circumstances, the circulation of the blood,—I infer (as many have done before me) that one of its offices is that of a reservoir or receptacle of the blood, *not required by the liver*; and that its state of distension or repletion depends much upon the condition of that organ.

" That in what is called white blood, or Leucocythemia, it is probable that the liver has more to do with the alteration in the blood than the spleen; an inference strengthened by the two cases related in the Appendix, and by the fact, that in numerous instances of Leucocythemia, the spleen has been found in a normal condition.

" That as in all quadrupeds (speaking from my own dissections) the spleen is on the left side of the stomach, and in many attached to the diaphragm, it is more than probable that this muscle, when the stomach is distended, produces considerable influence on the circulation of the blood through the spleen.

" That in birds, reptiles, and fishes, nearly all of which are unprovided with a muscular diaphragm, the spleen is for the most part seated on the right side of the spinal column.

" That after careful and extensive examinations of the spleen-pulp of different animals, I have failed to detect the blood-cells and decomposing blood-cells described by Kölliker.

" That the assumption, that the colouring matter of the bile is formed by the decomposed blood corpuscles has no accurate foundation.

" That in animals, the spleens of which have been excised, the bile presents no important alteration, either in its appearance or in its normal composition.

" That the arteries terminate abruptly in the spleen, in tufts, which surround the malpighian body, and serve for the secretion of its contents.

" That the blood of the splenic vein is coagulable, and that it differs in no important particular from the blood of the artery.

" That from numerous experiments upon rats, mice, and birds, I am unable to discover that quinine, the poison of reptiles and other noxious agents, produce any immediate contraction or special influence upon the spleen.

" That, judging from the table of cases of phthisis, in which the weight of the spleen did not exceed six ounces, and the size of the liver was much increased, it is fair to infer that the office of the spleen cannot be, as supposed by Dollinger and others, that of a supplementary liver.

" That, judging from the examination of a great number of the bodies of the lower animals (kept in confinement), in which the spleen was enlarged and tuberculated, the liver being sometimes tuberculous, and at other times normal, and *vice versa*, it is probable that the connection between the spleen and the liver (excepting the mechanical one) is not so intimate as has been hitherto supposed.

" That when the stomach is full, the splenic artery is probably straightened, and in this manner the flow of blood to the stomach is facilitated.

" That, with the exception of the Cheiroptera, the spleens of which resemble the Rodents, the spleen of an animal examined will alone tell the class to which it belongs.

" That the spleen of the *Quadrupana* bears the greatest resemblance to that of man, and that the lower we descend in the scale of creation (with a few exceptions), the greater is the dissimilitude of the spleen to that of the *Bimana*.

" That the weight of the animal does not indicate the size of the spleen, as

the deductions from the table of the examinations of one hundred and twelve horses prove.

"That in fat animals, judging from the examinations of prize sheep, pigs, and oxen, the spleen is smaller than in those in tolerable condition.

"Finally, That, taking all circumstances into account, with the evidence that I have obtained from the dissection of man and the lower animals, bearing in mind, especially, the relative proportions of the viscera in the various classes of animals that I have examined—and looking *particularly* to the effects of extirpation of the spleen, as exhibited upon the bodies of the three animals—a dog, cat, and rat—sent in jars, accompanied by animals (with spleens) fed and treated in the same manner—I infer, as before stated, that the spleen is comparatively an unimportant organ in the animal economy.

"That one of its offices is that of affording an adequate supply of blood to the stomach and liver, and to act as a reservoir for the blood, when the balance of the general circulation is deranged.

"That another of its offices is—judging from the beautiful arrangement of the malpighian corpuscles, and the distribution of the arteries upon them, and especially by the action of heat and nitric acid upon these corpuscles (never, I believe, before noticed)—to secrete an albuminous fluid, which performs some part in the process of sanguification." Pp. 171, 2, 3.

We cannot enter upon the subject of the Appendix farther than to state, that the successful Essay is criticised with no sparing hand; and what Dr. Crisp considers its many errors and omissions are pointed out at considerable length, and with much ability.

IV. *Researches on Colour-Blindness, with a Supplement on the danger attending the present system of Railway and Marine Coloured Signals.* By GEORGE WILSON, M.D., F.R.S.E., Professor of Technology in the University of Edinburgh. Edinburgh: Sutherland & Knox. 1855. Pp. 180.

THAT book must be interesting which shows that a subject of great importance to all classes has hitherto been almost entirely overlooked; this interest is greatly enhanced when the matter is handled in the clear, candid, and practical way in which Dr. Wilson here treats of Daltonism, chromato-pseudopsis, or as he (rightly we think) prefers to call it, Colour-blindness.

To those of normal vision, it seems hardly possible to imagine the existence of persons in whose eyes the purple heather, the yellow corn, and the green pasture land, seem all alike as far as colour is concerned; but so it is, and to a far greater extent than could be conceived by those to whom the subject is new.

Dr. Wilson considers "colour-blindness," as it shows itself in eyes otherwise normal, as of three kinds.

"1. Inability to discern any colour properly so called, so that black and white, *i.e.* light and shade, are the only variations of tint perceived.

"2. Inability to discriminate between the nicer shades of the more composite colours, such as browns, greys, and neutral tints.

"3. Inability to distinguish between the primary colours, red,

blue, and yellow, or between these and the secondary and tertiary colours, such as green, purple, orange, and brown." P. 8.

It is to this last variety that the author chiefly directs his attention.

Sufficient data do not exist to come to any decided conclusion on the subject, but Dr. Wilson seems to think that about two per cent. of the inhabitants of this country are colour-blind. He desires to increase his knowledge on this subject, and commends the inquiry to all interested in the subject, especially to those who have the opportunity of examining large numbers of persons, such as regimental surgeons, medical men in charge of factories, teachers of schools of design, and other educational institutions.

As far as can be ascertained, this defect seems much more common in the male than in the female sex; this, it is supposed, may be partially accounted for, by the higher value set upon appreciation of colour by women than by men, and the consequent reluctance among the softer sex to admit the existence of the defect. It is also in many cases hereditary.

Various writers "have recorded cases of temporary colour-blindness resulting from congestion, hepatic derangement, and dyspepsia, which disappeared under appropriate treatment;" but Dr. Wilson comes to the conclusion that congenital colour-blindness is incurable, but may be palliated by different means, the chief being (1) the substitution of artificial light for daylight in the examination of colours.

"The colour of ordinary artificial light is sensibly different from that of daylight, compared with which it is yellow or orange; in other words, the proportion of blue rays is smaller, and of yellow and red rays larger, than in daylight. It seems probable, accordingly, that the preponderance in artificial flames of yellow light, to which the colour-blind eye is keenly sensitive, is a great cause of its better vision by such flames; but the presence in these of red rays, which impress the abnormal organ of vision, as the red light of the sunbeam does not, must also largely contribute to the improved perception of colours. There must also be some proportion of red and yellow rays, in other words, some quality of artificial light, best fitted to approximate to normality the vision of the colour blind. That in a candle we have this quality of light at a maximum is matter of surmise, and experiment alone can show among the artificial lights in ordinary use which approaches most nearly to it. The colour-blind could largely assist themselves by comparing their arrangements of coloured objects by different flames with a settled chromatic standard; and others could assist them, by noting what colours they saw in the prismatic spectra of such flames." P. 120.

(2.) "Employment of yellow or orange transparent media to reduce daylight to the quality of ordinary artificial light." P. 121.

In the Appendix (Note I, p. 173) will be found a most ingenious palliation devised by the author's friend, Mr. James C. Maxwell of Trinity College, Cambridge. "A spectacle frame of the usual kind is constructed with one glass *red* and the other *green*, so that the right eye, for example, of the wearer of the spectacles, looks always through red, and the left always through green. Through the red glass, red objects appear *brighter* than green ones; through the green glass, green objects appear brighter than red ones, so that a colour-blind person puzzled between red and green, has only to determine whether the doubtful colour appears brighter to the right or the left eye, and set it down as of the colour of the glass which brightens it. The spectacles must of course have a single bridge, so that the same glass shall always be opposite the same eye, and the colour-blind party using them must know, from independent authority, which of the eye-pieces is red, and which green."

Space will not permit us to quote in full any of the various very interesting cases of colour-blindness cited by Dr. Wilson, but we may take a rapid glance at some of them, and their almost ludicrous results to the unfortunate subjects.

Imagine a quakeress appearing as a "scarlet lady," her gown having been bought as drab; and her husband turning out clothed, as to the nether man, in light green, thinking all the while that his legs were as usual dun brown. How awkward to write a proposal of marriage, or an appeal to the *Senatus Academicus*, half in black and half in red ink, with the signature possibly purple, and the address in azure blue! How uncomfortable must have been the sensations of the child who picked up "such a funny green thing," and behold it was a *red-hot* coal! The probabilities are, that he dropped it very quickly, and ever after associated burnt fingers with extreme greenness. What chance has an artist of becoming a royal academician, who copies "a brown horse in bluish green, paints the sky rose-colour, and roses blue? Such a man, we conceive, was intended by nature for a mediæval sign-painter, when blue boars, red lions, and green men were in great demand. A youth (very impertinently we think) asked a lady for whom she was in mourning, seeing she had on a *black* bonnet, to which she replied, that *crimson velvet* was not the usual sign of lamentation over a lost relative! A colour-blind tailor getting a blue coat to mend, sends it home with a crimson patch on the elbow. And a naval officer with the same defect purchased a pair of red trousers to *match* his blue uniform coat, thus exemplifying in his own person Burke's definition of beauty, "uniformity combined with variety." Had he presented himself to certain lords of the Admiralty in this costume, he would probably have been appointed instantly to the command of the Baltic fleet!

There lately came under our notice the case of two members

of the same family who can only see when the light, whether natural or artificial, is clear and bright; during twilight, or in a dimly-lighted room, they are *helplessly blind*. There is no peculiarity about their eyes or general appearance, and their appreciation of colour is perfect. Is this a new form of this defect, taking the shape of blindness to black, or the converse of Dr. Wilson's first form of colour-blindness?

In the latter part of the volume, Dr. Wilson ably reviews the whole subject in reference to the extreme danger that may arise on railways or at sea, should a colour-blind person have charge of signals. We recommend this bearing of the matter to the attention of all who travel by land or by water, but more especially to underwriters and directors of railways.

The usual railway signals, which cause the whole question of "safety, caution, and danger" to depend upon colour, are open to many objections, quite independent of the prevalence of colour-blindness; *e. g.*, during bright sunshine it is hardly possible for the normal eye to discriminate between a green, a red, and a black fan or disc. Why, as Dr. Wilson suggests, should the elements of *form* and *number* not be brought more largely into play? But we feel that we must bring this notice to an end: we cannot do so, however, without cordially recommending the work to the attention of all classes of the community, it being as intelligible and instructive to non-professional as to professional men.

V. *On the Pathology of Hooping-Cough.* By GRAILY HEWITT, M.D., Lecturer on Comparative Anatomy, &c., &c. Pp. 26, and Appendix. London: John Churchill. 1855.

Hooping-Cough, its history, nature, and successful treatment. By LAURENCE TURNBULL, M.D. Pp. 18. Philadelphia: Lindsay & Blackiston. 1855.

HOOPING-COUGH is a disease, respecting the true nature of which there is still much diversity of opinion among the members of the profession, and hence the treatment is, for the most part, entirely empirical. It is generally admitted, however, that it is an affection which has a definite course to run, and if simple and uncomplicated, rarely, if ever, proves fatal. On this account, the morbid appearances discovered on the bodies of those children who have died after attacks of hooping-cough, must be considered as the results of the complications or sequelæ of the affection, rather than as indicating anything in respect of its real nature and pathology.

Dr. Hewitt, in the short paper before us, which was read some time ago before the Harveian Society of London, confines himself

to certain points in the pathology of the disease, and grounds his observations on the results of a number of fatal cases treated in hospital practice. The most frequent complication or attendant of hooping-cough is undoubtedly bronchitis, and it is admitted by all writers that affections of the lungs and air passages are generally the cause of death. Dr. Hewitt, however, considers it highly probable that the bronchitis which so generally exists in hooping-cough, differs in some respects from the ordinary bronchitis of children, not only in its real nature, but in the lesions which take place in the lung. That state of the lungs found so frequently in fatal cases of hooping-cough, called "collapse of the lung," and which is generally attended, and probably produced, by catarrhal inflammation of the bronchiæ, is minutely explained by Dr. Hewitt, and its difference from the effects of ordinary pneumonia pointed out. He admits that Dr. Alderson, in a paper published in the *Medico-Chirurgical Transactions*, as far back as 1830, pointed out this important difference between the carnification found after hooping-cough, and ordinary hepatization arising from true pneumonia in adults. This difference consists in the fact, that in hepatization from pneumonia, the substance of the lung is perfectly solid, and cannot be restored to its original cellular state, whereas, in the collapse of children, the portions affected are found to be capable of being completely inflated, so that they can be made to assume their former normal appearance.

This distinction was pointed out and explained by Legendre and Bailly in their work on the diseases of the lungs in children, published in 1844. The portions of the lung so affected in cases of hooping-cough were found by them "to be inflatable, the effect of the inflation being to restore to the portions affected their normal appearance and qualities." For the name "lobular pneumonia," which has been given by many to the disease producing this state, these authors substituted the term "*état fœtal*." They pointed out the difference which existed between the effects of inflation on the portions which exhibited the fatal conditions, and on those affected with true pneumonia, the inflation producing no effect on the latter, while it restored the former to their normal appearance and qualities." Dr. Hewitt, when investigating the morbid appearances in his cases, invariably found that this distinction could be demonstrated. He says, "when a blowpipe was introduced into the bronchus leading to the affected portions, and inflation performed, the aspect of the collapsed portions underwent a striking change; they immediately assumed the appearance of the adjacent healthy lobules, and were in nowise to be distinguished from them, becoming enlarged, and the air-cells on the surface easily distinguished by the aid of a lens. The colour was changed from a dark violet to a light pinkish hue, such as is habitually seen in the healthy lungs of children. The lung substance was found then to float readily on water, and to have

become crepitant: when these inflated portions were left to themselves for a short time, they became to a certain degree collapsed; the lung contracting and expelling a portion of the air artificially introduced. The inflation was performed with ease in most of the cases, in some, however, the force necessary to be used was more considerable, and some portions were not inflated at all by the additional force used. The portions which occasionally resisted full inflation, were the posterior surfaces of the lower lobes."

This collapse of the lung is very generally accompanied with more or less of emphysema, a state, indeed, which is found in almost all chronic bronchitic affections. The catarrhal inflammation of the smaller tubes, always present in fatal cases of hooping cough, and which has been variously designated capillary bronchitis, vesicular bronchitis, catarrhal pneumonia, &c., is first productive of collapse of the lung, and this soon produces the emphysema. The mode by which this is effected is very minutely described.

The Appendix contains a table exhibiting at one view the state of the lungs, the bronchial membrane, and the other organs, in nineteen fatal cases which occurred in the practice of the author. The results are stated as follows:—"In the *right lung*, portions of the upper lobe were found collapsed in six cases, and in four more to a less degree. The middle lobe was collapsed, wholly or in part, in sixteen cases. The lower lobe was more or less affected with collapse in eighteen cases. In the *left lung*, the upper lobe presented the same lesion in fifteen cases. The lower lobe was collapsed more or less in eighteen cases. The test of MM. Bailly and Legendre, viz., the inflatability of the portions of the lungs thus affected, was used in almost all the cases, and on that and other grounds it was determined, that the particular part of the lung in question was collapsed and not hepatized."

We must state that in our opinion Dr. Hewitt is in the right track for determining the true nature of hooping-cough, viz., the examination of all fatal cases, and thereby ascertaining the morbid changes produced upon the lungs and other organs. And when the exact nature and pathology of the disease is thus made apparent, the treatment will no longer be empirical, but will be founded on strictly rational principles, and hence most likely to be successful.

The other short tract named at the head of this article, is by an American physician, and is confined almost wholly to the treatment of hooping-cough. It gives a short history of the different stages of the disease, with the prognosis, duration, the modes of propagation, and the plan of treatment which the author has found most successful. It appears to us a very common-place production, written for a medical society, and for the purpose of lauding the extract of belladonna as an infallible remedy. This medicine has been frequently tried, and although

it appears to be of some use where there is no complication, no bronchitis or pneumonia, it cannot bedepended upon where the affection is complicated by disease of the lungs. Dr. Turnbull gives one-sixteenth of a grain to an infant of three months of age, and one-eighth to a child aged one year, three times a-day. Twenty cases, *free from complication*, were thus treated and cured, the average duration being ten days, whereas he states that "the ordinary duration of the disease, when treated in the usual manner, is from $1\frac{1}{2}$ to $3\frac{1}{2}$ months; even by prussic acid, or the application of the nitrate of silver, the average is from two to three weeks." Many authors are quoted, who speak in very favourable terms of the power of belladonna over the disease; and Dr. Turnbull gives a *resume* of a host of remedies which have been from time to time considered capable of curing it; such as alum, hydrocyanic acid, sub-carbonate of iron, garlic, bark, nitrate of silver internally and by conterzation, nitric acid, chloroform, &c., &c., but of course the extract of belladonna has been found by far the most useful and successful in the hands of this American physician.

VI. *The Census of Ireland for the Year 1851. Part III. Report on the Status of Disease. Presented to both Houses of Parliament by command of Her Majesty.* Folio, pp. 120, and an Appendix. Dublin: Thom & Sons. 1854.

IN taking the census of Ireland in 1851, the commissioners appointed for that purpose were not satisfied with merely enumerating the people, but made preparations for "procuring returns of all those persons who laboured under disease, whether in their own houses or public Institutions, upon the night of March 30, 1851." "It was conceived that such returns would, when properly classified, present at one view, not only the amount and distribution of disease, but also the maladies to which the inhabitants of this country are most exposed at a certain period of the year. No similar attempt has, we believe, been yet made to collect and tabulate the diseases presented on a single day, in even a limited portion of any other country." The result is the very elaborate report presented to Parliament, and published in 1854. The first great division of diseases made by the framers of this report, is into those maladies which are *permanent*, and those which are of a *temporary* nature, or at least whose duration is comparatively limited; the former comprehending those persons labouring under defects rather than diseases, as the blind, deaf, and dumb, epileptic, paralytic, idiotic, lame, and decrepit, &c.; the latter including all the acute and chronic diseases to which the inhabitants at large are liable.

The report accordingly is divided into nine sections, one section being devoted respectively to the deaf and dumb, the blind, the lunatic and idiotic, and the lame and decrepit, the remaining five sections containing details of the sick in workhouses, in hospitals, in prisons, in asylums, and the total sick in Ireland. A very large mass of valuable and most useful information, statistical and otherwise, which it is difficult to compress, is contained in the various sections. This is peculiarly the case with respect to the first section, which treats of the number and condition of the deaf and dumb; the information regarding this class of unfortunates having been hitherto extremely meagre and unsatisfactory. It would be well if similar reports respecting deaf mutes in England and Scotland could be procured. We must confine our present remarks, however, to those sections which treat more especially of the sick, or those affections which are rather of a temporary nature. Section vi. treats of the number and condition of the sick in the various public hospitals for the reception and treatment of accidents or disease. A short history is given of the early state of medicine in Ireland, from which we extract the following:—

“The social history of nations is not sufficiently explicit or minute, to enable investigators to say when hospitals were first erected in different countries; but as civilization advanced, public institutions for the reception and care of the sick were founded, and supported by the piety and generosity of individuals, or by communities, or the State. The wayside hospice afforded refuge for the wounded; the preservation of the healthy caused receptacles to be erected, where those labouring under contagious diseases were set apart from the rest of the people; some of the Crusader knights, devoting themselves to the care of the sick, established hospitals; and medical knowledge, with other branches of learning, being chiefly in the hands of ecclesiastics, the monastic establishments of the middle ages afforded whatever medical relief the laity of that period received. But long prior to the erection of those institutions, traces of which may still be found in most of the countries of Europe and the East, we read that, when the regal residences of Tara and Emania existed, there was attached to the latter ‘the house of the crimson branch,’ where the warriors of old hung up their arms and trophies; and near to this stood the Broin Bearg, or the ‘house of sorrow,’ where the sick and wounded were provided for. Thus, before the introduction of Christianity into this island, we read of a building being set apart for the maintenance and recovery of the diseased.

“In later times, when an epidemic cutaneous disease overspread this kingdom, in common with most of the countries of Europe and Asia, hospitals dedicated to St. Lazarus, and subsequently bearing his name, were erected for the isolation and maintenance of persons afflicted therewith, traces and traditions of which have descended to the present day. Our Celtic manuscripts contain many references to leprosy and lepers in the middle ages, but these notices chiefly refer to miraculous cures, said to have been performed upon persons affected with that disease, or to the districts and places set apart for their abode. The locality called “Lazar’s Hill,” in the city of Dublin, was probably of this nature. The present “leper hospital” of Waterford, the establishment of which has been attributed by tradition and the local histories to King John, was originally used for persons labouring under that disease. There was one leper in it in the year 1775, and that is the last instance of the kind recorded in this country.”—Pp. 89, 90.

Of the *general* hospitals in Ireland—institutions, we presume, for the reception of all kinds of medical and surgical cases—there are fifteen, located in Dublin, Waterford, Belfast, Limerick, and Cork. "These institutions, having accommodation for 1,621 patients, afforded relief to 94,504 sick persons during the previous decade, and had 787 under treatment at the time of taking the census."

In addition to these fifteen general hospitals in the large towns, there have been established since the middle of the last century various infirmaries in the rural districts, and there is now, as the report informs us, one infirmary for each county in Ireland. These institutions for the reception of accidents and medical and surgical cases, amount at present to thirty-six, and afford accommodation to 2,091 persons. "The numbers relieved during the imperfect decade between the census of 1841 and 1851 were 195,370, and the total number of patients within these institutions upon the night of the 30th of March, 1851, was 1,748."

The report then alludes to Fever Hospitals and the number of patients therein. On this part of the subject, we find the following particulars:—

"At the time of taking the census of 1851, there were 61 fever hospitals in Ireland, providing accommodation for 3,760 persons, and affording at that moment relief to 1,117 patients, irrespective of 890 paupers sent there for treatment from the different unions, either direct from the workhouses, or admitted upon the tickets of relieving officers, amounting in all to 2,007. The number of patients treated in the fever hospitals specified in the following table, during the defective decade, extending from the 6th of June, 1841, to the 30th of March, 1851, was 253,866, or 11,439 more than the receptions of similar institutions during the former period, viz., from 1831 to 1841, the sexes recorded being in the proportion of 100 females to 85·33 males. But the returns of those treated during the latter period (from 1841 to 1851) are very far short of the actual number, inasmuch as the records of some of the institutions did not afford the necessary information—several of the fever hospitals which existed, and afforded extensive accommodation during the early period, over which the present census inquiry extends, have been either closed or attached to workhouses; and, in addition, vast numbers of the poor were treated in temporary hospitals erected during the years 1847-8, &c., but which did not exist on the night of the 30th of March, 1851, and consequently did not come within the province of the present report."—P. 94.

From a very comprehensive table in this section, showing the locality, date of erection, amount of accommodation, and number of patients in each of the hospitals on the night of 30th March, 1851, it appears that 3,839 persons, 2,153 males and 1,686 females, were in the public hospitals of Ireland, intended for the temporary reception and treatment of the sick, and not provided for by the poor-law at the time of taking the census, and that 706 persons, 339 males and 367 females, were provided with hospital accommodation in fifteen fever hospitals.

A second table is given, showing the ages, sexes, and the dis-

eases of the patients in the public hospitals of Ireland on the night of 30th March, 1851, and this section concludes with the following general summary:—

“The following table, No. II, shows, by ages and sexes, the diseases under which 3,839 persons in hospital laboured. Of these, 1,617 were of the epidemic or contagious class, the females predominating over the males by 4·94 per cent. The most prevalent of epidemic diseases was fever, numbering 1,107 cases, in the proportion of 100 females to 93·19 males. The next most important items of this class are syphilis, amounting to 204, or 105 males to 99 females; and ophthalmia, 158, the residue of the epidemic of that affection, which, during the previous years, had prevailed so extensively among the lower orders. The cases of diseases of the brain, nervous system, and organs of sense, amounted to 107, or 67 males and 40 females; of this class the most extensive item is for paralysis, 41, and the next in magnitude, nervous diseases, 14, including a variety of affections, such as chorea, hysteria, &c. 42 persons were affected with diseases of the circulating organs, of whom somewhat more than one-half laboured under affections of the heart. 270 cases were registered under diseases of the lungs and respiratory organs, among which class, the two largest items were bronchitis, 89, and consumption, 73. 217 persons were under treatment for diseases of the digestive organs, of whom 96 laboured under dropsy, an affection which has for a long time prevailed extensively among the peasantry of this country. This affection being often only symptomatic of other diseases, especially those of the heart and liver, it is difficult to come to any conclusion with respect to the influence which change of food may exercise upon the extent of this malady hereafter. The remaining items of any note in this class of disease, were affections of the stomach, 29; dyspepsia, 26; liver complaint, 17; and jaundice, 12. 55 persons were under treatment for diseases of the urinary organs, of whom only one laboured under stone—calculus having always been an affection of great rarity in Ireland.

“We received a return of 117 cases of affections of the generative organs, of which 74 were females in childbed, or the parturient or puerperal state in the different lying-in hospitals. Under the term *paremia* are included all cases of irregular menstruation; 14 males laboured under diseases of the genital organs, not of a syphilitic character. Cases of diseases of the locomotive organs amounted to 611, the most extensive items in which class were affections of the bones and joints, numbering 177, including white swellings, but exclusive of 53 cases of hip disease. Rheumatism numbered 169, and fracture 140 cases.

“It is remarkable that, with the exception of the class of urinary diseases, and those of the locomotive organs, the number of persons under treatment in the general hospitals was greater in 1841 than in 1851. This increase in the latter class of diseases may be accounted for by the greater number of accidents occurring to persons engaged in public works in the latter than the former period, and also from the circumstance of a large number of poor persons affected with chronic diseases having found accommodation in the workhouses and workhouse hospitals, thus allowing a larger amount of accommodation for accidents and acute diseases in the general hospitals and infirmaries.

“Diseases of the tegumentary system amount to 332, of which number 197 were cases of ulceration, chiefly of the extremities. The class included under the head of “diseases of uncertain seat,” amount to 405, among which 107 persons laboured under wounds of different kinds, attributable, in all probability, to the same causes which have influenced fractures and other injuries and accidents of a like nature. Accidental causes not included, in any of the foregoing sections, number 58, of which 41 were under treatment for burns and scalds, and 14 from accidental causes unspecified.

“The ages of the foregoing 3,839 patients in hospital are likewise specified in the following table. Of the entire number, 1,198 were aged from 20 to 30.”—P. 100.

Our limits will not allow us to enter upon the consideration of the other sections, but to these we may perhaps advert on some future occasion. Meantime we quote a few sentences from the general summary of the sick in the whole of Ireland :—

“The total number of sick, including those affected with permanent disease, returned from all Ireland upon a single day, was 104,495, or about one in every sixty-two and a-half of the population. How far this may be under or above the proportion of sick to healthy at any one time in other countries approaching in climate, soil, extent of population, amount of pauperism, proportion of civic to rural districts, and other circumstances of a similar nature, we have as yet no means of ascertaining; but we trust that the present attempt to enumerate the number of sick, and to tabulate the diseases of the people in a single day, will be followed up in other countries; and thus, by establishing a means of comparison, we may endeavour to account for the prevalence of particular diseases, and may hope to alleviate the sufferings of human nature. The proportion of the sexes in the foregoing 104,495, was 100 females to 95·53 males.

“The amount of persons labouring under epidemic diseases far out-number those from all other causes, amounting to 34,998, or 1 in 3 of the total sick.

“Taking up the class of epidemic diseases in detail, we find the items exhibiting the greatest number are fever, dysentery and diarrhoea taken together, and ophthalmia and influenza. The total number of persons who laboured under fever on the night of the 30th of March, 1851, was 13,777, or 1 in 8 of the entire number from all causes. Compared with the population, it prevailed principally in those localities which we have already specified as exhibiting the greatest amount of epidemic disease, but its principal habitates were the work-houses and workhouse hospitals, as many as 7,888 of the whole amount of fever cases being returned from these localities.”—P. 116.

With respect to the ages of persons affected with epidemic diseases, we find that, of the 34,998 sick persons whose ages were returned, 8,251 were under ten years of age; 12,077, ten and under twenty; and 14,670, twenty and upwards.

VII. *Guy's Hospital Reports*. Edited by SAMUEL WILKS, M.D., and ALFRED POLAND, F.R.C.S. Third Series. Vol. I. London: John Churchill. 1855. Pp. 381.

In the introduction to the volume now before us, we are informed that twenty years have elapsed since the first volume of “*Guy's Hospital Reports*” appeared. Supported by such men as Sir Astley Cooper, Key, Callaway, Golding Bird, and Bright, the work acquired a very high reputation—such a reputation as it will be extremely difficult even for the present able staff of the Hospital to maintain. And indeed, in the altered state of medical periodic literature, it may be fairly doubted whether it is good policy, or advantageous to the advance of medicine, for the contributions of a large staff of physicians and surgeons connected with the same Hospital, to be collected together and published at uncertain intervals, in a form which renders them not so accessible as they might be to the profession at large. Thus we find in a glance at

the list of subscribers, that there is but one copy taken in Ireland, and another in Scotland, so that but few in these countries will derive much benefit from a really able publication. The opening paper by Dr. Gull, on the treatment of *tænia* by the oil of male fern, is the result of the observation of fifty cases. In his hands it has proved remarkably successful. It is given in the form of an ethereal tincture, prepared from the rhizome, evaporated to the consistence of a syrup. The dose was generally from $1\frac{1}{2}$ to 2 drachms, taken in a mucilaginous draught. In the course of his short remarks, Dr. Gull notices the influence of locality in the production of the disease, the cases at Guy's being almost limited to individuals residing on the banks of the Thames, and the low lying districts of the south side of the river.

By the same author we have the report of a very rare and most interesting case of "thickening and dilatation of the arch of the aorta, with occlusion of the innominate and left carotid, and atrophic softening of the brain."

Dr. Pavy, well known by his former researches, continues them on the normal destruction of sugar in the animal system. As this whole subject, however, forms the subject of another paper in this Journal, we shall not here remark upon it. Passing over several rather uninteresting communications, we find one by Mr. Birkett on adenocoele, well worthy of attention. The author points out that tumours on the mammary gland are composed of different elements; that they are difficult to diagnosticate, variable in their course, important in their results, and the source of apprehension and alarm to the patient. And in recording cases of a class of new-growths, he calls attention to the different circumstances by which they are to be detected, and to the mode of treatment which ought to be pursued.

To form a correct diagnosis, age is an important element. Out of 62 of these cases which came under observation, 46 were developed at various ages between twelve years and thirty; 16 between thirty and fifty.

"Adenocoele seems to be developed at those ages when the procreative functions may be assumed to be in their most active condition; for, in 62 examples, exactly half, namely 31, were developed before the age of 24 years. Thus, if the period of life, from birth to forty-eight years, be divided into three periods of sixteen years—the first, from birth to sixteen, which may be termed the developmental period; the second, from sixteen to thirty-two, the period of developmental perfection of the gland; and the third, from thirty-two to forty-eight, the period of functional decline—I can show, that in the 62 cases, 5 occurred in the first period, 41 occurred in the second period, and 16 in the third. . . . In the estimation of the value of the facts bearing upon the social condition of the patients who have fallen under my observation, some doubt might arise, but I have been very careful to ascertain

whether the growths were developed before or after marriage. The 62 cases afford the following data:—

Single, when the tumour was first observed,	45
Married, at the time the tumour was first observed,	17
	<hr/> 62

Of the married women, there were:—

Prolific,	11
Sterile,	5
Not stated,	1
	<hr/> 17

Of these 11 prolific women, it is interesting to inquire when the tumour was developed,—whether during pregnancy, when the mammary gland undergoes important changes, or after the cessation of the functions of the ovaries? And we find that in six cases the tumours were developed after the cessation of child-bearing; and in some cases a considerable period had passed since the last birth. In one case the tumour was developed three months after a second parturition. In the remaining four, the growth first appeared during pregnancy, that is to say, in one case, during the first pregnancy; in a second, during the second pregnancy; in a third, during the fourth pregnancy; in a fourth, during the sixth pregnancy. The facts derived from the observation of all these cases appear to afford conclusive evidence, that the development of these new-growths is intimately associated with the development or functional activity of the mammary gland itself. Should, however, this be the case, it seems difficult to understand why, in so large a proportion of cases, one breast only is the seat of a new-growth. In 59 examples, only three patients had tumours developed in both the breasts. Of the remaining 56 cases, they occurred exactly in equal proportions; that is, there were 28 women with a tumour in the right breast, and the same number with one in the left.”—Pp. 132-34. As regards treatment, Mr. Birkett has never seen any advantage derived from external applications, nor is there any necessity for the removal of the tumour, unless it be large and its increase progressive. The prognosis of adenocoele is always favourable, but the difficulties of diagnosis must be borne in mind. It must be determined whether or not a new-growth really exists; and the author points out that morbid conditions of the gland, especially when there is much induration, are apt to mislead. The condition of the mammary gland, as regards its functional activity, should be inquired into, and having determined that the disease under observation is a tumour, and that the gland is inactive, it is then necessary to decide as to the nature of the growth.

“If the patient was under thirty years of age when the tumour

was first observed—if she be single, and in good health—if the tumour rolls under manipulation, and is difficult to fix for examination—if this proceeding gives pain, causes some excitement and flushing of the cheeks, and if the pain continue, the surgeon may be tolerably certain that the small hard tumour is an adenocele. Should it happen that the case is not seen until the tumour is very large, great care must then be taken to isolate the new-growth from the breast itself, and when this is carefully accomplished, the integuments will glide freely over its surface, which may be seen to be divided in lobes, and distinct from those of the normal gland. Large veins may traverse the breast, but although large, they lie freely under the skin, and not in furrows, as is often the case when cancer has infiltrated the integuments. The whole breast is pendulous, the skin stretched, its follicles very distinct, the areola expanded, and the nipple small and flattened, but never retracted. The integuments are healthy, their pink tint sometimes a little enhanced, and the lymphatic system of the organ wholly free from disease.”—Pp. 135, 136.

The author describes the varieties of adenocele, showing that they may be divided into three well-marked classes. The first is composed of new-growths which are compact, dense, firm, fibrous, lobed on their surface and in their interior, and enveloped in their own capsule. The second class are cystoid formations, having growths within them which seem to spring from their walls, these growths being loose, pedunculated, and floating or sessile, and with no connective tissue between them, its place being often supplied with fluid. The third division are cystoid formations, distinctly referable to the dilatation of a duct, or to connection with one, and containing growths which appear to spring from their walls. The “chronic mammary tumour” of Sir A. Cooper belongs to the first of these; the sero-cystic tumours of Sir B. Brodie to the second; while in the third division should be classed those described by Brodie “as arising by a dilatation of portions of some of the lactiferous tubes.”

Mr. Birkett illustrates the varieties of the different divisions by a number of cases, and by references to pathological specimens. The quotations which we have given from this able essay will, we hope, induce our readers to peruse it *in extenso*.

Among the remaining papers are to be found some of great interest. Dr. Owen Rees contributes one “on the pathology and treatment of alkaline conditions of the urine,” and Dr. Wilks an able report on the cases of fever in Guy's Hospital during 1854. We cordially wish the new series every success.

VIII. *The Journal of Public Health and Sanitary Review*, including the Transactions of the Epidemiological Society of London. Edited by BENJAMIN W. RICHARDSON, M.D., &c. &c. Quarterly, Nos. 1, 2, and 3. London: Samuel Highley.

WE take blame to ourselves for not, at an earlier period, noticing the advent of this new quarterly journal, three numbers of which have already appeared, and the fourth will be due on 31st Dec. Its object is to supply the public and the profession with regular and correct information in regard to public health and epidemic diseases, their causes and prevention. It will necessarily embrace all subjects connected with the sciences of epidemiology and hygiene. From the talent, scientific knowledge, and unwearied industry of the editor, Dr. B. W. Richardson, joined to his very large and efficient staff of contributors, we have not the least doubt that it will be conducted in such a manner as to insure its permanent success. The numbers already published contain many interesting papers on sanitary and social questions—progress of epidemics, hygienic jurisprudence, &c. &c. Each number also has appended to it a full account of the transactions of the Epidemiological Society of London; this portion being separately paged, so that it will form a distinct work at the termination of each volume.

These may all be read with much advantage, both by the medical and the general philanthropist, and if the succeeding numbers contain as useful and interesting matter, there is no doubt the "*Journal of Public Health*" will assume and maintain a high place in medical and general literature.

In the first number there is an article "*On the sanitary regulations of the British army*," professedly a review of various works connected with our military system; and in the third number, Dr. John Davy writes a short paper on the same subject. From these articles we make the following short extracts, as particularly interesting at the present time:—

"Throughout the course of the war, comparisons have been made between the health of the French and of the English troops, and the cause of this difference has been supposed to consist in a difference of military organization. This may be the fact to a certain extent, but it is far from being the whole fact. The grand difference is based on the circumstance that the French, as a nation, are some fifty or a hundred years ahead of us in their practical knowledge and application of the means of preserving health. In England, we have no standard literature of hygiene—no work on this subject showing the foot-prints either of genius or of industry. In France, first-class works of this kind are as common as biographies, histories, or elementary treatises on natural science. The French have their *Dictionary of Hygiene*; their records of sanitary improvements; and, in a quarterly work, entitled *Annales d'Hygiène Publique*, the choicest epitome that can be imagined on all subjects relating to health and life. Their system of medical education, moreover, provides for instruction in the principles of sanitary science. Many of their most leading medical practitioners

are distinguished as authors on hygiene, and still more on general science; and, as it is felt amongst the rising generation of their Esculapian brotherhood, that the surest way to become an eminent practitioner is to become an eminent scholar, there is little or no temptation offered for any man to hold back, with all his might, the assistance which he may be capable of furnishing to universal knowledge.

"The science of the preservation of health, being thus freely promulgated among all classes of the French nation, becomes naturally an integral part of the organization of their army medical service. The principles of discipline, so necessary for an army, show themselves as fully in the hospital as on the marching ground; and the medical officer is, in his way, kept up to as strict a practical mark as is the drill sergeant. The French military medical officer, who holds a position in the service vastly superior to that held by his brother in the British army, must possess, likewise, a thorough acquaintance with a variety of subjects. He must know the best sites for hospitals; the readiest means of building temporary hospitals; the simplest and easiest plans for conveying wounded men; the number of men that can be tolerated in one ward; the clothing best suited to the constitution of the soldier at home and abroad; the diets which may be most easily prepared, and be most suitable under various conditions; and the amount of physical toil which is compatible with the steady enjoyment of health. With all this information, he combines a correct and most extended knowledge of the nature and treatment of actual disease. Lastly, in order to add greater efficiency to the French army medical system, the records of the medical service are regularly published under government authority; and every important suggestion or improvement is thus duly chronicled and preserved.

"When all these facts are taken into account, it becomes at once obvious that no actual comparison can be made between the medical services of the French and the English armies. As regards the treatment of actual disease, an analogy may exist; and we doubt not that, as mere practitioners, the English medical officers are at least equal to the French. But in an expedition far away, the old proverb, that prevention is better than cure, assumes a meaning doubly precious; and a medical corps is of less than half its real use, if it is either incompetent, or is not left free to act in the establishment, and in the carrying out of those rules upon which alone prevention depends."—Pp. 35, 36.

Dr. Davy, in the third number, has some very sensible remarks on the same subject, which want of space alone prevents us extracting.

We have no hesitation in strongly recommending this Journal as deserving of every encouragement, and as well worthy a place in all medical and scientific libraries.

MEDICAL INTELLIGENCE.

1. *Glasgow Medical Society, October 16, 1855.*—An ordinary meeting of the society was held this evening,—Mr. Lyon in the chair. The minutes of last meeting having been read and approved of, the society proceeded to the election of office-bearers, when the following gentlemen were appointed for the ensuing session:—W. Lyon, Esq., President; Dr. J. Adams and Dr. J. Bell, Vice-Presidents; Dr. J. Fraser, Treasurer; and Dr. J. G. Wilson, Secretary.

Mr. Lyon then drew the attention of the society to a case of femoral aneurism

in a man fifty years of age, fireman on board a vessel, who has been and still is under his care in the wards of the Royal Infirmary. The disease had commenced nine weeks prior to his admission, without any assignable cause. The tumour is about the size of an orange, situated at the upper part of femoral artery, above the spot where the profunda is given off. It is of an irregular form, being broad above and narrow below, and presents all the characteristic symptoms of aneurism. His vascular system was apparently in a sound and healthy state. On being submitted to a consultation, it was recommended to try the effects of compression—Mr. Lyon giving it as his opinion that he did not in this case anticipate much benefit from this mode of practice, owing to the very unfavourable position of the arterial tumour, and the difficulty in obtaining an adequate resisting surface. The patient having been bled, purged, and put on low diet, a compressing apparatus was applied, somewhat resembling a saddle, with a vertical metallic stem ending in a pad, and acting by means of an elastic spring. This apparatus was tried for a considerable time, but owing to the difficulty in retaining it in proper position, and the facility with which it was displaced on the slightest motion of the patient, and from the great pain and uneasiness it occasioned, it was ultimately thrown aside. Another form of apparatus was now tried, consisting of two pieces of gutta percha moulded to the pelvis, and well padded, with an india-rubber ball placed upon the vessel, to which was attached an elastic band, and over this was laid a bag of small shot. This was persisted in for nine or ten weeks. For some time it was supposed the tumour was decreasing in size, and becoming firmer and more solid from the formation and deposit of coagula; but this was not confirmed by subsequent results. The instrument proved perfectly inefficient, and was abandoned. Unwilling to allow the patient to leave the hospital without something further being done, it was determined to try the effects of delegation of the artery on the cardiac side. On Thursday last—five days ago—whilst the patient was under the influence of chloroform, Mr. L. in the usual way cut down upon and placed a ligature around the external iliac, with the effect of instantly obliterating all pulsation in the sac, and of materially diminishing its size. A short time after the operation a slight thrill or impulse was detected in the artery, which, however, disappeared towards night. The limb retained its normal temperature, and was free from swelling. On the third day after operation, a faint erythematous blush was observed around the wound, pus began to form, and symptoms of sub-acute peritonitis soon supervened, which, up to the present time, have persisted, notwithstanding the use of calomel and other antiphlogistic measures. The patient at present is in a very precarious condition. Many surgical authorities consider and describe this operation as one of a very favourable and successful kind, inasmuch as the peritoneum did not require to be opened as in operations for hernia. He thought, however, that mere incision of the peritoneum was a much less serious matter than the frequent handling of it, which is unavoidable in almost all cases. The dangers both immediate and remote were also, generally speaking, great—such as hemorrhage, gangrene, peritonitis, &c.

Dr. Adams quite concurred with Mr. Lyon in thinking that delegation of the external iliac artery was a more serious operation than most surgical writers would lead us to infer. He believed that the repeated handling of such a delicate membrane as the peritoneum was more likely to be productive of injurious results than simply opening it. The previous compression he was inclined to think a good preparatory course of treatment to that of ligature.

Dr. Fairley also considered that the difficulties and dangers of this operation were often underrated by surgical writers. He believed the dangers consequent on tearing, handling, or otherwise injuring the peritoneum, to be much greater than at once dividing that membrane. He would suggest that the peritoneum should be opened in those cases as a matter of principle and choice.

Mr. Lyon, in reply, stated that two important points, very liable to be overlooked, were involved in the case detailed—viz., the effects of previous pressure in arousing the collateral circulation, and the opening of the peritoneum as be-

ing possibly a less violent procedure in such cases, than the kind of handling to which the parts were necessarily subjected.

November 6th, 1855.—Mr. Lyon stated that the case of femoral aneurism in which he had tied the external iliac artery, had terminated fatally on the sixth day after operation, from sub-acute peritonitis. This unfortunate result had occurred in spite of every possible attention, and the free use of mercury administered both internally and by endermic application. The patient's condition ultimately assumed more of an asthenic type than the contrary, and stimulants were prescribed. There was almost constant hiccup, accompanied with considerable tympanitic distension of abdomen. On *post-mortem* inspection, nothing very striking or peculiar was observed, except that the vessels ramifying on the peritoneum were found in a congested state, and a considerable quantity of plastic lymph had become effused in the vicinity of the wound. As far as the mere operation was concerned, everything was satisfactory. He had at last meeting expressed his belief that opening the peritoneum was, perhaps, a less injurious procedure than the handling of that membrane, which is so unavoidable in the generality of instances. On subsequent reflection, the idea occurred to him that the simple turning of the peritoneum up, or dissecting it back, so as to get at the vessel, would be preferable to either method. He was not at first prepared to say whether or not any one had previously tried or recommended this mode of operating, but he has since found that Abernethy had not only recommended, but practised this method. An objection, he remarked, might be urged against the plan, from the danger of wounding the epigastric artery; still he thought that there would be less detachment of, and less disturbance to, the surrounding textures, than by the usual operation.

Dr. Adams was of opinion that Mr. Lyon's suggestions as to the reflecting back the peritoneum, might possibly, in some degree, simplify and facilitate the steps of the operation; at the same time he would fear the after consequences more from this method than from simple section of the peritoneum. Any inflammation or suppuration that might arise would be very apt to extend and involve the pelvic fasciæ, which might not be easily controlled.

Dr. J. G. Wilson exhibited a portion of the bladder of a woman, which had sloughed and separated about a week after delivery. He had been present, and assisted a medical friend with the delivery of the patient by means of the forceps, after she had been upwards of 40 hours in severe and lingering labour. She had given birth to several children previously, and no pelvic deformity could be detected. The vulva and vagina, from the long-continued pressure of the child's head, were very much swollen and inflamed. A few days after delivery, violent sloughing commenced on the inner aspect of left labium, and which gradually extended in an upward direction, and involved the surrounding textures, producing, as he feared, irreparable injury to the bladder. After sloughing had once commenced, everything was tried in vain with a view to arrest its further progress. When he last saw the patient, she appeared in tolerable health, and three fingers passed per vaginam could easily be introduced into the interior of the bladder. The catheter was required for retention of urine for some time subsequent to delivery, showing that no laceration or rupture of the bladder had been inflicted by the use of the forceps. The blades of the forceps were, in this case, not applied antero-posteriorly, but in a lateral direction; and he thought that the unfortunate result could in no way be attributed to the use of instruments, but to their being too long delayed. The slough was of the form of an ovoid ring, measured $2\frac{1}{2}$ inches long, and $1\frac{1}{2}$ in breadth, and resembled much the blade of the forceps, with its fenestrum, or miniature. The central portion was the first to slough and come away, and the surrounding parts soon followed.

Dr. Adams stated that he was indirectly concerned with a case where a woman practising as a midwife mistook a prolapsed bladder for protrusion of the distended membranes, and had actually snipped it through with a pair of scissors—a vesico-vaginal fistula was the result, and the patient died three or four weeks subsequently. This same woman, on another occasion, performed craniotomy

by thrusting the identical pair of scissors into the infant's head—the mother and child were interred together a few days afterwards.

Mr. Lyon quite concurred with Dr. Wilson in thinking that the fistulous communication with the bladder could not in his case be ascribed to the use of the forceps. He thought that many, if not the majority, of such cases were to be attributed rather to the non-employment of the forceps, or to delay in using them. When there existed great pressure, the circulation became impeded and arrested, and ere long would induce sloughing, if artificial delivery was not effected in time. Much had been said and written about the radical or curative treatment in such cases. Judging from his own experience and observation, the efficient treatment was comprised within narrow limits. The plastering up of the fissure, and bringing the edges together by sutures, was a very difficult matter, and very rarely successful, and frequently tended to make matters worse. In his opinion most benefit was to be derived from the use of the cautery as being the most natural method of repairing the breach.

Mr. Lyon next referred to a case which he had recently met with, and which presented a train of very anomalous symptoms. It was that of a boy, 13 years of age, who two months ago was first affected with several small indurated tumours on the leg, several of which degenerated into rather peculiar-looking ulcers of variable size, having a central depression and ragged edges. After these had existed for about a month, the eyes became affected in a singular manner. The eyeballs protruded excessively from between the eyelids, which were in a highly oedematous state. The conjunctivæ were red and much congested, there being almost complete exophthalmia, and the pupils were dilated whilst vision was little if at all impaired. One of the testicles was also considerably enlarged. His appearance presented an indication of the strumous diathesis. He had been treated with mercury before Mr. Lyon was consulted. Dr. Mackenzie, who saw the patient along with Mr. L., was at first inclined to believe that this affection was of a syphilitic character, but ultimately considered it as resulting from pyæmia. He likewise stated to Mr. L. that he had seen several analogous cases, and that they almost invariably proved fatal. Mr. L. was not inclined to adopt Dr. M'Kenzie's views as to the cause or pathology of this affection; he thought that neither syphilis nor pyæmia, nor yet struma, would account for the remarkable appearance presented by the eyes. He had seen many cases of syphilis and pyæmia too, and yet, in no single instance, did he notice the eyes to be affected in the manner just described. There could, however, be no doubt that this was a constitutional affection, dependent upon some taint of the blood, but what the essence of this taint was it was difficult to determine. Understanding that Dr. Ferral had derived some benefit from the use of the iodide of potass in similar cases, this medicine was administered, with a due allowance of wine. Fowler's solution was also prescribed.

Dr. Adams stated that the only case which he had met with at all resembling that detailed by Mr. Lyon, occurred several years ago. The patient, a little girl about eight years of age, previously healthy, but of a decidedly strumous diathesis, presented a chain of well-marked and somewhat remarkable symptoms. A number of small tumours or boils made their appearance on various parts of the body, but principally on the lower limbs. She complained much of pain in the head, at first of an intermittent character, with occasional tremors in the limbs. The eyes were suffused and congested, the pupils dilated, and the sight seriously impaired. She suffered occasionally from attacks of retching and vomiting. Delirium and insensibility supervened, and the patient gradually sunk and expired, without deriving any relief from the varied and active treatment which she received. On *post-mortem* examination, a number of tubercles of variable size were studied throughout the brain, some being of a soft and curdy consistence. The brain itself was preternaturally soft, and a considerable quantity of serum was effused about its base. The tumours on the limbs, when examined, were found to contain tubercular matter. He was inclined to think that Mr. Lyon's case would run a similar course.

Dr. Fairley considered that there was no analogy between the symptoms in

Mr. Lyon's case and those observed in pyæmia. Cases of pyæmia are generally of much shorter duration, and never, as far as his experience went, exhibit such symptoms as were noticed in Mr. L.'s case.

Dr. J. G. Wilson mentioned having lately seen a case of live and premature birth, in which there existed some difficulty in determining the exact age of the child. The child, when born, weighed a pound and a quarter, measured 10 inches, and lived for a period of 36 hours. According to the calculation of the mother, the infant could be little more than $4\frac{1}{2}$ months, she having menstruated 5 months previously. The skin was of a reddish hue, and somewhat tender in appearance; nails resembled folds of thickened cuticle; and the eyelids, although adherent, could be separated, so as to bring into view the membrana pupillares. The exact position of the cord was overlooked. The child, as soon as it was born, was enveloped in cotton, and kept almost continually beside a fire. It was evident that either the mother was mistaken in her calculations, or else that the development of the child was unusually advanced for its age. Children born at the full period vary much both in weight and size, and it was but reasonable to suppose that they should do so at any stage of uterine existence.

Dr. Adams mentioned having seen a case where he had some difficulty in fixing the precise age of the child. It weighed a pound and a half, and lived for 8 days. He had also met with a case of abortion where the fœtus lived for some hours. The skin presented a raw appearance, and the limbs were very imperfectly developed. He referred to the frequently quoted case detailed by Dr. Outrepost, in which the child when born weighed a pound and a half, measured $13\frac{1}{2}$ inches, and lived for several years. He also alluded to the case reported by Dr. Rodman of Paisley, and made some remarks on the evidence given by Dr. Christison in the Kinghorn case.

Dr. McEwan briefly mentioned the particulars of a case which he had recently met with, in which utero-gestation was alleged to have been protracted to a period of 10 months and 5 days. This case was interesting in a medico-legal point of view, as involving a question of contested legitimacy, or disputed paternity.

Mr. Maxwell said, that most authorities agreed that 40 weeks from the cessation of the catamenia was the normal duration of pregnancy in the human female. Well-authenticated cases, however, of retarded or protracted gestation were now on record, although he had never met with such.

November 20th, 1855.—Dr. Fraser Paton, Greenock, was unanimously elected a member of the society.

Mr. Lyon briefly mentioned that the boy whose case he detailed at last meeting was gradually getting worse, in spite of all the treatment he had tried. He now entertained but little hope of his ultimate recovery.

Dr. J. G. Wilson exhibited a pelvis which he had excised from the body of a woman who was delivered of a child a few days before by embryotomy, under circumstances of peculiar difficulty. The patient died from exhaustion just as the operation was completed. The preparation illustrated that variety of pelvic deformity known and described as the obliquely ovate pelvis of Nægele. The two sides of the pelvis were not symmetrical. The left half, though small, was of normal form; whilst the right was imperfectly expanded and much contracted, apparently in consequence of the right wing of the sacrum being undeveloped and incomplete. No trace of the right sacro-iliac synchondrosis could be detected anteriorly, although the left was perfectly distinct. The posterior superior spinous process of the right ilium was in close apposition with the second last lumbar vertebra, and at this part was fully two inches higher than the corresponding part of the opposite side. There existed spontaneous dislocation of left hip-joint; the cavity of the acetabulum was quite obliterated, and the globular head of the femur altogether absorbed. The antero-posterior diameter of the brim, at the widest part, when the soft parts were removed, measured about 3 inches, and the transverse or lateral diameter about 4 inches. The soft parts within the pelvis were preternaturally thick, and tended to diminish its capacity in a still greater degree. The child was considerably above the average size.

The patient was 22 years of age, of a highly strumous diathesis, and had been long engaged in a sedentary occupation. She had for many years been affected with morbus coxarius and disease in the lumbo-sacral region, from both of which localities small portions of carious bone had been from time to time discharged. As confirmatory so far of the views of Retzius, he might mention that this woman's fingers presented a stunted appearance. This species of distorted pelvis, according to Ramsbotham, was remarkably rare, only a few specimens of it to be found in London. It would be interesting to know whether the deformity of the pelvis was owing to congenital malformation or original arrest of development, or simply as resulting from disease and consequent absorption.

Mr. Lyon stated that the preparation was one illustrative of several interesting and important points, both in midwifery and surgery. The contracted state of the pelvis was due, in his opinion, more to disease of the bones occurring subsequent to birth than to original irregularity of formation. The disease had prevented the due expansion and regular development of the pelvis.

Dr. Bell, in referring to the views entertained by Retzius as to the stunted condition of the fingers being frequently associated with, and prognostic of, difficult and protracted parturition, stated that such was not always the case, as he had found the reverse to occur in an instance he had recently met with. It had been alleged that difficult labours increased in proportion as we ascended the scale of intelligence, and it had also been attempted to be shown that the sex of the child exerted considerable influence over the duration and severity of labour.

Dr. Adams stated that cases of difficult parturition were seldom heard of as occurring amongst some uncivilized tribes. The different size and configuration of the head and pelvis, and the mode of living, without doubt contributed to this result.—The Society then adjourned.

2. *Quarterly Report of the State of Disease in the Glasgow Royal Infirmary.*—

During the quarter extending from the 19th of September to the 19th of December, the number of patients admitted to the whole house has been 844; the number dismissed has been 660; and the number of deaths has been 85. In the ordinary medical and surgical wards the admissions were 673, the dismissals 537, and the deaths 54. In the fever wards the admissions were 171, the dismissals 123, and the deaths 31. Towards the end of the quarter, the number of fever and small-pox cases has been somewhat on the increase. The number of fever patients throughout the year has been remarkably small, being nearly the same as in 1850, in which year the number was 790, which rose to more than double in 1851, being 1743, which was again considerably increased in 1852, being 1992, which rose still higher in 1853 to 2117, its culminating point, and fell last year to 1285, and in 1855 will be found to be again as low as 800. The number of accident cases admitted has been about 140.

The following are the principal operations performed during the past quarter.

1. *Amputations of the Thigh.*—One case, fatal.

W. A., admitted on the 23d October with compound comminuted fracture of the knee joint. Amputation was performed on the lower third of the thigh; but he did not rally, and died two days after.

2. *At the Knee Joint.*—One case, fatal.

W. B., aged 16, admitted on 8th November with injury of the leg by machinery. Amputation at the knee joint was performed. The issue was fatal.

3. *Below Knee Joint.*—Two cases, successful.

M. N., aged 46, admitted on 6th November with a diseased leg of thirty-one years' duration. Had been frequently a patient in this hospital, and had numerous operations performed for the removal of necrosed bone. It was determined, on his last admission, to remove the leg, which was accordingly done, and he is now in a fair way of recovery.

F. M. T., aged 45, was admitted on 13th November with caries of tibia and fibula. Amputation was performed below the knee, and she is now nearly well.

4. *Of Leg.*—Two cases, one successful, and one unsuccessful.

R. M. L., aged 10, admitted on 24th September with compound fracture of both bones. Amputation was performed, and he made a favourable recovery.

J. K., aged 34, admitted on 14th December with compound fracture of leg. Immediately after admission amputation was performed, but symptoms of phlebitis having supervened, he died in seven days after the operation.

5. *At Ankle Joint*.—Two cases, successful.

B., aged 20, admitted on 28th September with caries of the bones of right foot and ankle. The foot and the diseased portion of the bones of leg were removed, and the case did well.

M. M'D., aged 12, was admitted on the 5th November with caries of the bones of foot. Amputation was performed at the ankle, and she is doing well.

II. *Excisions*.—1. *Of Elbow Joint*.—One case, successful.

J. S., aged 17, admitted on 20th October with strumous disease of the elbow joint of two years' duration. The diseased bones forming the articulation were removed, and she is now ready to be dismissed well.

2. *Of Knee Joint*.—Two cases, one successful, and one under treatment.

T. M'E., aged 13, was admitted on 20th September with strumous disease of the knee joint. Excision was performed, and he has been dismissed cured.

J. M'S., aged 23, admitted with disease of the knee joint of six years' duration. The diseased portions of bones were excised. Since the operation unfavourable symptoms have appeared, and the result remains doubtful.

3. *Of Tumours*.—One fatty tumour of neck and one scirrhus mamma were removed with success.

4. *Of Parts of Bone*.—Several cases of this kind occurred, which presented no special points of interest.

III. *LIGATION OF ARTERY*.—There was one case of ligation of the external iliac artery.

O. B., aged 49, was admitted on 21st July with aneurism of the femoral artery high up. Compression by various means was adopted for a lengthened period, by which the collateral circulation was established, without effecting the obliteration of the main artery. It was then determined to tie the external iliac. The operation was performed, and the patient seemed to do well for a few days; but peritonitis, accompanied with tympanitis, hiccup, and vomiting, came on, and he shortly after died.

3. *Death of Sir George Ballingall*.—It is with much regret that we announce the death of Sir George Ballingall, M.D., the Regius Professor of Military Surgery in our University. Sir George, who had been in weak health for a very considerable time, died at his country seat, near Blairgowrie, on Tuesday evening. He had held the Professorship of Military Surgery in the University of Edinburgh for thirty-two years, and while his professional skill and attainments were highly esteemed by his colleagues and pupils, his kindness to his patients, and his general urbanity and friendly disposition, secured for him the regard of all who knew him. The deceased professor also held the dignity of Surgeon to the Queen, and to the Duchess of Kent; he was Consulting Surgeon to the Royal Infirmary; a Fellow of the Royal College of Surgeons, Edinburgh; a Fellow of the Royal Society; an Honorary Member of the Royal College of Surgeons, Ireland; and a Member of the Medical Societies of Paris, Vienna, St. Petersburg, and Berlin. Sir George began his career in the army, and was for some years surgeon to the 33d Regiment of foot, in which capacity he acquired the knowledge and experience which enabled him so well to discharge the duties of his chair. The profession is indebted to him for several valuable contributions to medical literature, the chief of which are, "Observations on the Diseases of the European Troops in India," "Observations on the Site and Construction of Military Hospitals," and "Outlines of Military Surgery." Owing to advancing years, Sir George had, for some time past, contemplated retiring from the active duties of his Professorship, and had fixed his eye upon the late Dr. Mackenzie as a worthy successor to the office; but the death of that gentleman in the Crimea seems to have interfered with his intention, so that he died "with harness on his back." In Sir George the medical profession loses a member who enjoyed the universal respect of his brethren.—*Scotman*.

BOOKS RECEIVED.

- Researches on Colour-Blindness, with a Supplement on the Danger attending the Present System of Railway and Marine-coloured Signals.** By George Wilson, M.D., Regius Professor of Technology in the University of Edinburgh. Edinburgh: Sutherland & Knox, 1855.
- On the Pathology of Hooping-Cough.** By Graily Hewitt, M.B., Lecturer on Comparative Anatomy. London: J. Churchill, 1855.
- Practical Remarks on the Treatment of Spermatorrhœa.** By John L. Milton, M.R.C.S.L. Third edition. London: James Highley, 1855.
- A Treatise on the Structure and Use of the Spleen, being One of Three Unsuccessful Essays for the Astley Cooper Prize, awarded July, 1853, with Additional Notes and an Appendix.** By Edwards Crisp, M.D., &c. &c. London: H. Teape & Son.
- Address to the Ethnological Society of London, delivered at the Annual Meeting, 25th May, 1855, by John Conolly, M.D., President; and a Sketch of the Recent Progress of Ethnology, by Richd. Cull, Hon. Secy.** London: W. M. Watt, 1855.
- The Medical Profession: Suggestions for its Reform.** November, 1855.
- Hooping-Cough: its History, Nature, and Successful Treatment.** By Laurence Turnbull, M.D. Philadelphia: Lindsay & Blakeston, 1855.
- On the Nature, Treatment, and Prevention of Pulmonary Consumption, and Incidentally of Scrofula.** By Henry M'Cormac, M.D. London: Longman & Co., 1855. [Dr. M'Cormac lays claim to the discovery of the formation of tubercle, mainly from the carbon and other impurities retained in the blood, owing to the imperfect performance of the function of respiration; and he assumes to demonstrate this fact in the present treatise. We will probably notice it more at length in our next number.]
- Transactions of the State Medical Society of the State of New York, transmitted to the Legislature 13th February, 1855.** Albany: E. Van Benthuyson, 1855.
- Quarterly Return of the Births, Deaths, and Marriages Registered in the Divisions, Counties, and Districts in Scotland.** Published by authority of the Registrar-General. Quarters ending 31st March, 30th June, and 30th September, 1855.
- Monthly Return of the Births, Deaths, and Marriages Registered in the Eight Principal Towns of Scotland, with the Causes of Death at Four Periods of Life.** Published by authority of the Registrar-General. August, September, and October, 1855.
- The Indian Annals of Medical Science.** October, 1855.
- Journal of Public Health and Sanitary Review.** Edited by Benj. W. Richardson, M.D. No. 3, September, 1855. (In Exchange.) [No. 2 has not reached us.]
- The New York Journal of Medicine and the Collateral Sciences, July and September, 1855.** (In Exchange.)
- The Edinburgh Medical Journal, October, November, and December, 1855.** (In Exchange.)
- The Journal of Psychological Medicine, October, 1855.** (In Exchange.)
- The Dublin Journal of Medical Science, November, 1855.** (In Exchange.)
- The Dublin Hospital Gazette.** (In Exchange.)
- The Association Medical Journal.** (In Exchange.)
- The Medical Circular.** (In Exchange.)
- The American Journal of the Medical Sciences, October, 1855.** (In Exchange.)
- The Nashville Journal of Medicine and Surgery, September and November, 1855.** (In Exchange.)
- The Medical Examiner, Philadelphia, May, June, July, August, September, 1855.** (In Exchange.)

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